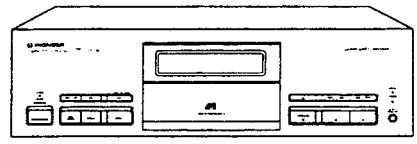
PIONEER®
The Art of Entertainment

Service Manual



ORDER NO.
RRV1284

COMPACT DISC PLAYER

PD-S904
PD-S904-G

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	The voltage can be converted by following method.
	PD-S904	PD-S904-G		
HBW	○	–	AC220 – 230V	AC230 – 240V, *
HEM	○	○	AC220 – 230V	AC230 – 240V, *
HL	○	–	AC220 – 230V/230 – 240V	With the voltage selector
SD	○	–	AC110V/120 – 127V/220V/240V	With the voltage selector

* : Alter the wiring of the Power-supply block at the primary winding of power transformer referring to the "Line Voltage Selection" described in Service Manual.

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T-SSG ARP. 1995 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

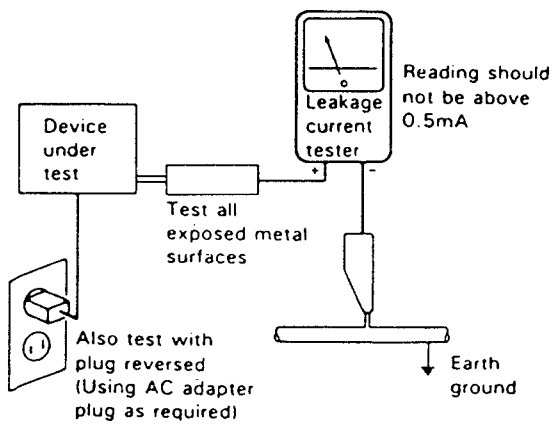
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Leakage current tester
Reading should not be above 0.5mA
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

LASER
Kuva 1
Lasersateilyn varoitusmerkki

WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

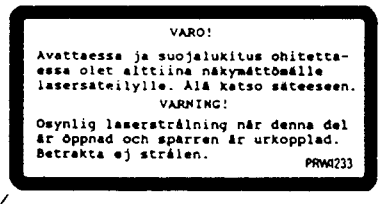
LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

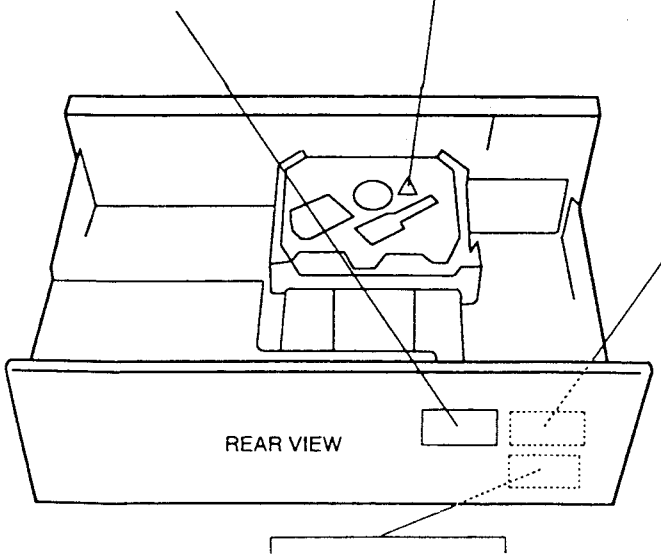
LASER
Picture 1
Warning sign for laser radiation

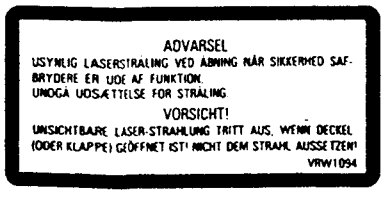
LABEL CHECK

HBW, HL and HEM types

HEM type


VARO!
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING!
Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.
PRW1233




ADVARSEL
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHED SAFBRYDERE ER UDE AF FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING
VORSICHT!
UNSICHTBARE LASER-STRAHLUNG TRITT AUS, WENN DECKEL (ODER KLAPPE) GEÖFFNET IST! NICHT DEM STRAHL AUSSETZEN!
VRW1094

HEM type

HBW and HL types

Additional Laser Caution

1. Laser Interlock Mechanism
   The position of the switch (S601) for detecting loading completion is detected by the system microprocessor, and the design prevents laser diode oscillation when the switch (S601) is not $\overline{\text{CLMP}}$ terminal side (when $\overline{\text{CLMP}}$ signal is OFF, that is, high level).
   Thus, the interlock will no longer function if the switch (S601) is deliberately set to $\overline{\text{CLMP}}$ terminal side (if $\overline{\text{CLMP}}$ signal is low level).
   In the test mode *, the interlock mechanism will not function.
   Laser diode oscillation will continue, if pin 1 of MSI593FP (IC101) on the preamplifier board loaded on pickup assembly are connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

2. When the cover is opened with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

* : Refer to page 32.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

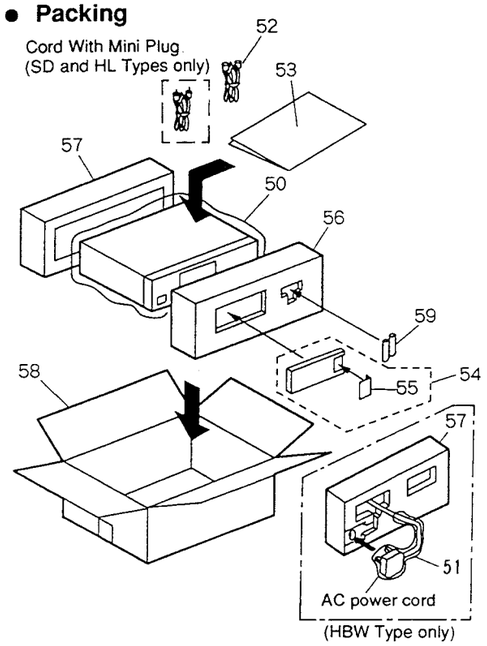
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

2.1 EXTERIOR SECTION AND PACKING (For PD-S904/HBW)

Parts List

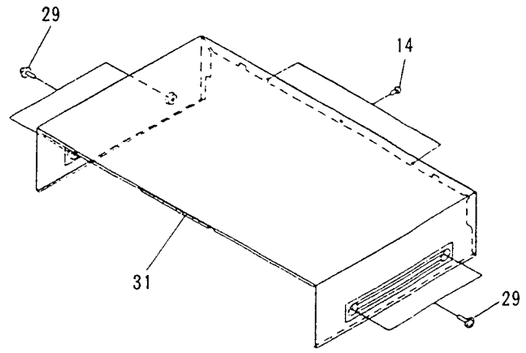
Mark	No.	Description	Parts No.
	1	Front panel 9	PAN1320
	2	Name plate	VAM1032
	3	Function panel 9	PNW2586
	4	Display window	PAM1668
	5	LED lens	PNW2019
	6	Power button 9	PAC1810
	7	AUDIO TRANS BOARD ASSY	PWZ2993
	8	Function button 78	PAC1744
NSP	9	SW BOARD ASSY	PWZ3007
	10	Screw	PPZ30P150FMC
NSP	11	FUNCTION BOARD ASSY	PWZ3003
	12	Tray panel	PAN1321
	13	Screw	IBZ30P060FCC
	14	Screw	BBT30P080FCC
	15	Caution label	PRW1018
	16	SERVO TRANS BOARD ASSY	PWZ2921
	17	Screw	IBZ30P080FCC
	18	Insulator	PNW2020
	19	Screw	IBZ30P150FCC
	20	Screw	IBZ30P060FCC
NSP	21	LOADING MECHANISM ASSY TT	PXA1521
	22	Output button	PAC1661
	23	Screw	BBZ30P080FCC
	24	Indicator lens	PEA1206
	25	.....	
NSP	26	Under base	PNA1973
	27	.....	
NSP	28	COAXIAL OUTPUT BOARD ASSY	PWZ2986
	29	Screw	FBT40P080FZK
	30	.....	
	31	Bonnet	PYY1175
NSP	32	Audio angle	PNA1968
⚠	33	Fuse (T5A)	PEK1003
⚠	34	Power transformer (AC220-230V)	PTT1242
⚠	35	Power transformer (AC220-230V)	PTT1245
	36	Stopper	PNM1134
	37	PCB spacer	PNY-404
	38	MAIN BOARD ASSY	PWZ2964
NSP	39	Cushion (3.5)	PEB1110
NSP	40	PCB holder	PNW2100
	41	AUDIO BOARD ASSY	PWZ2917
⚠	42	AC power cord	PDG1055
⚠	43	Cord stopper	CM-22B
	44	Rear base B9	PNA2222
	45	.....	
	46	.....	
	47	.....	
	48	.....	
	49	Cord clamper	RNH-184
	50	Mirror mat sheet	Z23-007
	51	Vinyl bag	Z21-013
	52	Cord with plug	PDE1248
	53	Operating instructions (English)	PRB1228
	54	Remote control unit	PWW1093
	55	Battery cover	PZN1012
	56	Protector F	PHA1243
	57	Protector R	PHA1253
	58	CD packing case E9	PHG2136
NSP	59	Battery (R03, AAA)	VEM-022
	60	Earth spring A	PBH1213
	61	Earth spring B	PBK1138
	62	Name plate holder	PNW2591
	63	Tray holder	PNW2592
	64	FL sheet white 9	PAM1682
	65	Display panel	PAN1309
NSP	66	Under cover	PNB1536
	67	Getter label	PRW1410
	68	Binder	ZCA-SKB90BK
	69	Earth plate	PBK1090
	70	Rivet	RBM-003
	71	Cushion	VEC1013
	72	Caution label	VRW-329

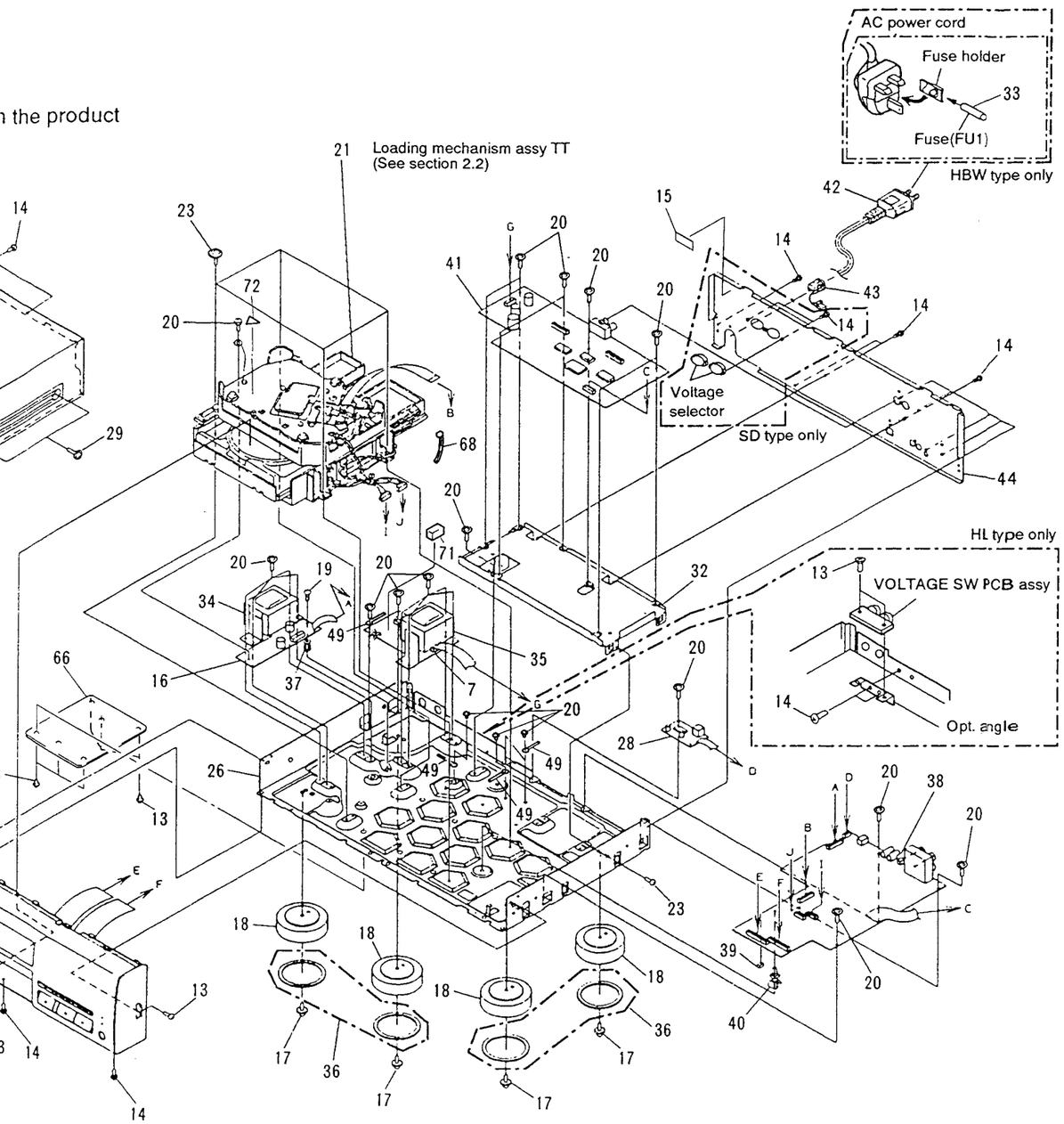
● Packing

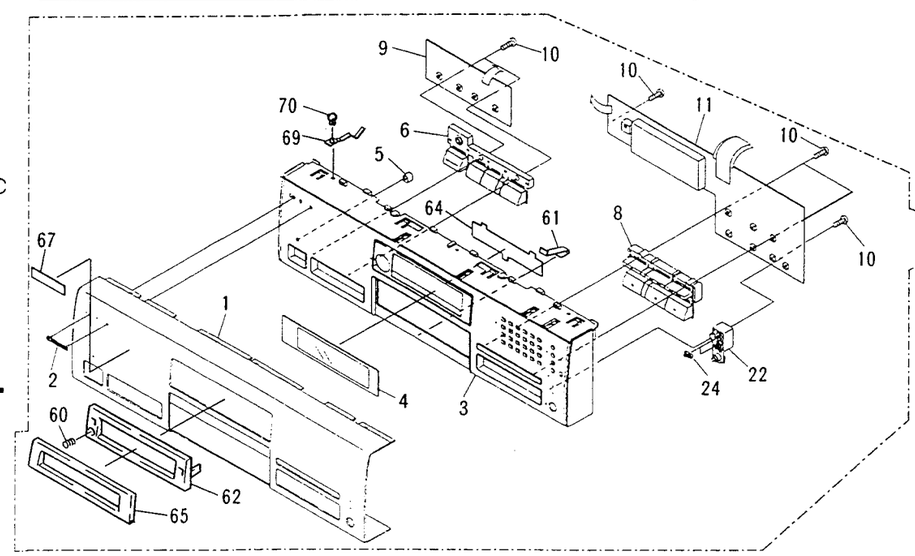


● Exterior Section

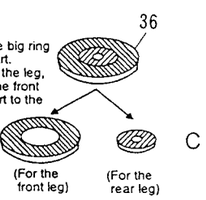
NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.



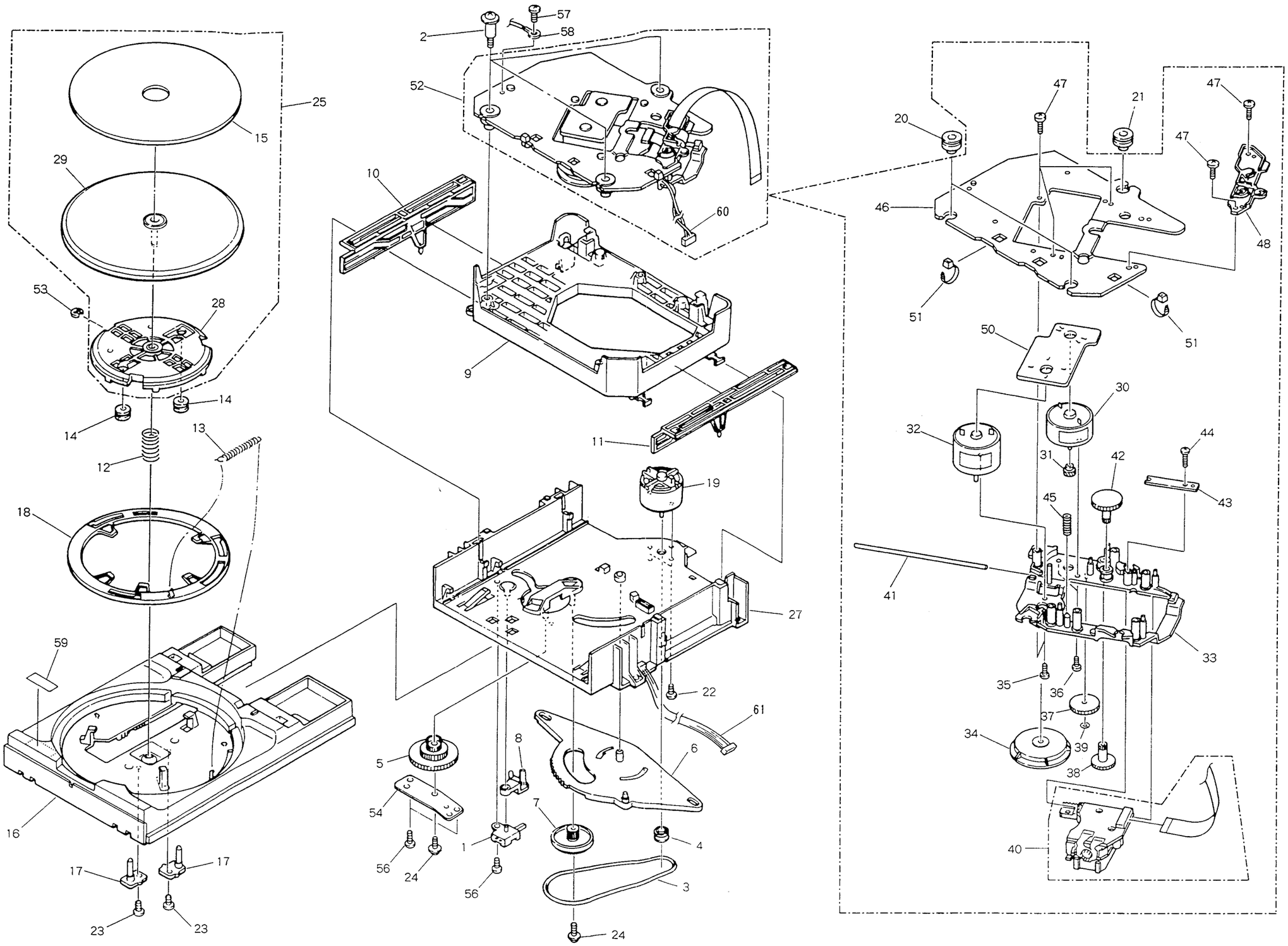




Note : The stopper consist of the big ring part and the small ring part.
If you stick the stopper to the leg, stick the big ring part to the front leg, and the small ring part to the rear leg.



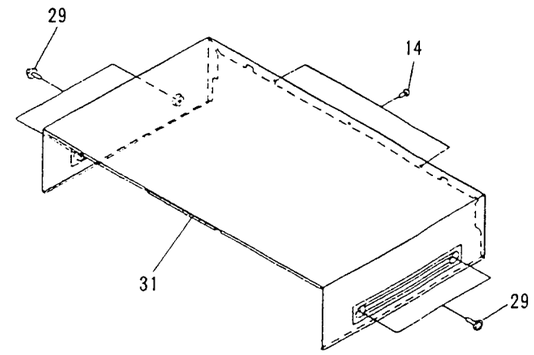
PD-S904, PD-S904-G

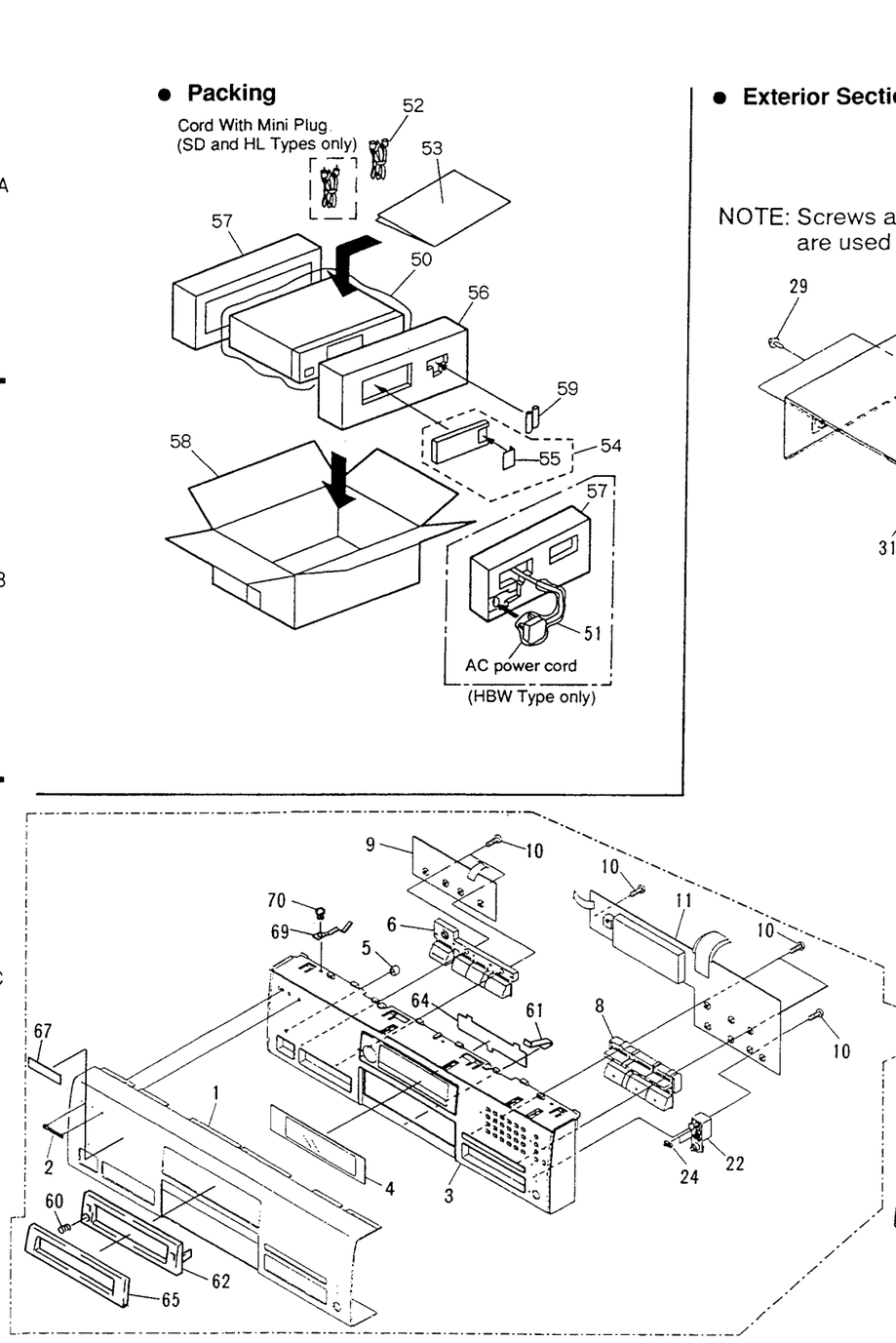


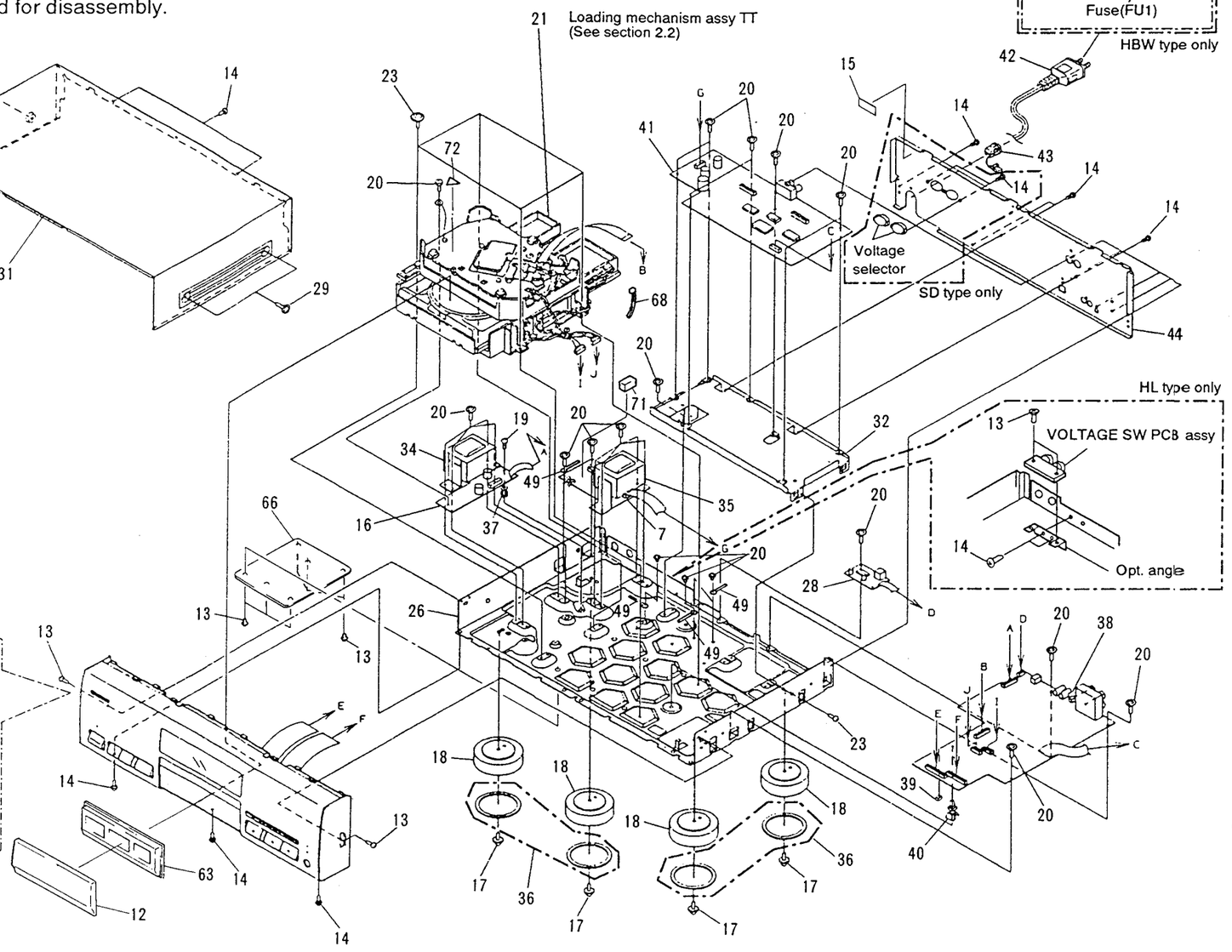
● Packing

● Exterior Section

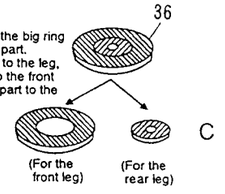
NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.

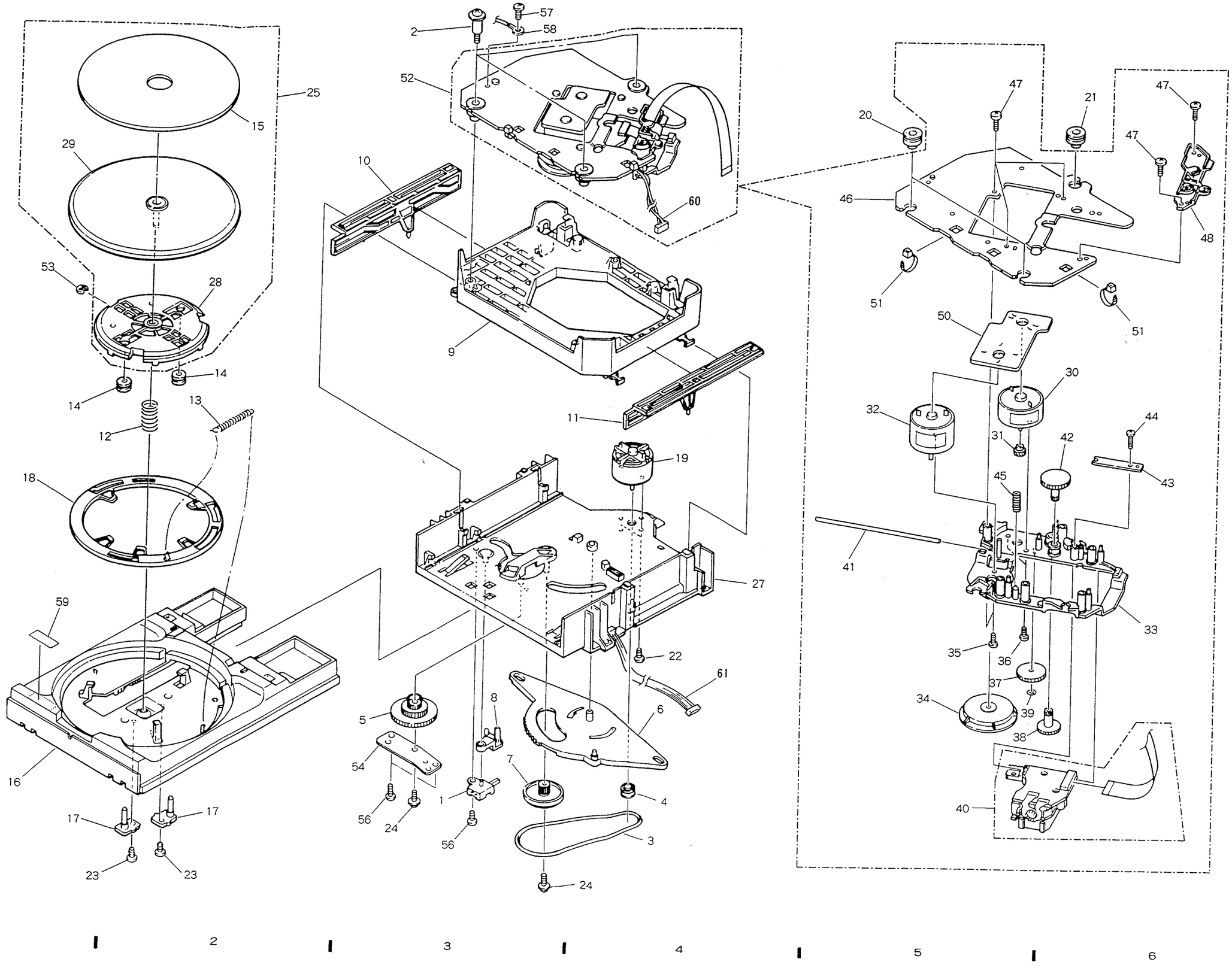






Note : The stopper consist of the big ring part and the small ring part.
If you stick the stopper to the leg, stick the big ring part to the front leg, and the small ring part to the rear leg.

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2.2 LOADING MECHANISM ASSY TT

Parts List

Mark	No.	Description	Parts No.
	1	Lever switch (S601)	DSK1003
	2	Float screw	PBA1027
	3	Rubber belt	PEB1186
	4	Motor pulley	PNW1634
	5	Driving gear	PNW1196
	6	Synchronized lever	PNW2168
	7	Gear pulley	PNW1198
	8	SW head	PNW1999
	9	Float base	PNW2000
	10	Left cam	PNW2001
	11	Right cam	PNW2002
	12	Float spring	PBH1120
	13	Lock spring	PBH1121
	14	Float rubber	PEB1014
	15	Table rubber sheet	PEB1181
	16	Tray	PNW2003
	17	Table guide	PNW2004
	18	Lock plate	PNW2005
	19	D.C. motor (0.75W, LOADING)	PXM1010
	20	Float rubber	PEB1031
	21	Float rubber	PEB1170
	22	Screw	BMZ26P040FMC
	23	Screw	IPZ26P060FCU
	24	Screw	IPZ20P080FMC
	25	Turn table assy	PEA1165
	26	.....	
	27	Loading base	PNW1995
NSP	28	Table shaft holder	PXA1383
NSP	29	Turn table (AL)	PNR1035
	30	Carriage D.C. motor (0.3W)	PXM1027
	31	Pinion gear	PNW2005
	32	D.C motor assy (SPINDLE, with oil)	PEA1236
	33	Carriage base	PNW2445
	34	Disc table	PNW1067
	35	Screw	JF20P030FNI
	36	Screw	JFZ17P025FZK
	37	Gear 3	PNW2054
	38	Gear 2	PNW2053
	39	Washer	WT12D032D025
	40	Pickup assy	PEA1179
	41	Guide bar	PLA1094
	42	Gear 1	PNW2052
	43	Gear stopper	PNB1303
	44	Screw	BPZ20P060FMC
	45	Earth spring	PBH1132
NSP	46	Mechanism base TT	PNB1431
	47	Screw	BPZ26P100FMC
	48	PWB holder	PNW2057
	49	.....	
	50	Mechanism board assy	PWX1192

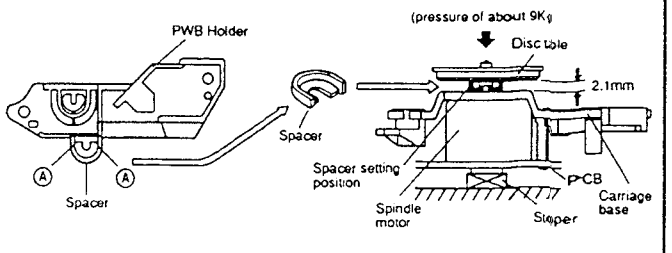
Mark	No.	Description	Parts No.
	51	Binder	PEC-107
NSP	52	Servo mechanism assy TT92	PXA1479
	53	Stop ring	YE20S
	54	Shaft holder	PNB1382
	55	.....	
	56	Screw	BPZ26P060FMC
	57	Screw	BBZ26P060FMC
NSP	58	Earth lead	PDF1148
	59	Caution label	PRW1244
	60	Connector assy 4P	PDE1238
	61	Connector assy 5P	PDE1243

• How to install the disc table

1 Use nippers or other tool to cut the two sections marked (A) in figure 1. Then remove the spacer.

2 While supporting the spindle motor shaft with the stopper, put the spacer on top of the carriage base and stick the disc table on top (takes about 9Kg pressure).
Take off the spacer.

1 2



3. DISASSEMBLY

3.1 REMOVE THE TRAY PANEL

Hold the tray panel with your hands as shown in Fig. 1, and grasp the tray with your thumbs and then lift the tray panel up while pulling it toward you with the other fingers. (Fig. 2)

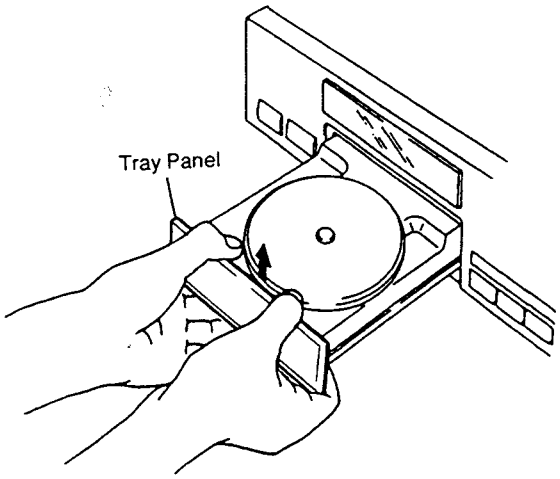


Fig. 1

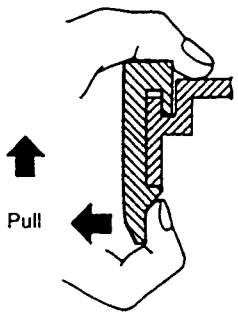


Fig. 2

3.2 INSTALL THE TRAY PANEL

Align the tray panel with the grooves located at both edges of the tray. And then press it down till it stops. (Fig. 3)

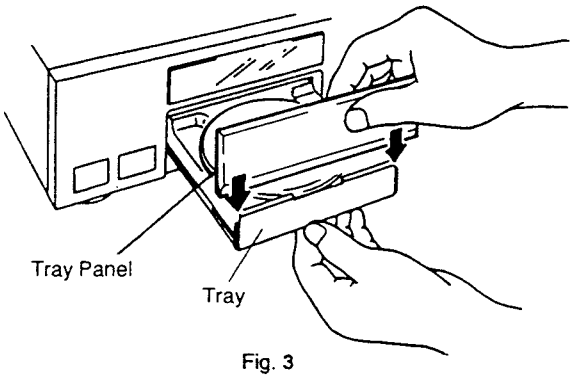


Fig. 3

4. SCHEMATIC AND PCB CONNECTION DIAGRAMS

NOTE FOR SCHEMATIC DIAGRAMS (Type 4A)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. RESISTORS:
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. CAPACITORS:
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. COILS:
   Unit: m:mH or μH unless otherwise noted.
6. VOLTAGE AND CURRENT:
   ⊐ or ⊢ V :
   DC voltage (V) in PLAY mode unless otherwise noted.
   ⇦ mA or ⊢ mA :
   DC current in PLAY mode unless otherwise noted.
   Value in ( ) is DC current in STOP mode.
7. OTHERS:
   - ⊘ or ❶ : Adjusting point.
   - ◁ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. SCH—□ ON THE SCHEMATIC DIAGRAM:
   - SCH—□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. SWITCHES (Underline indicates switch position):

FUNCTION BOARD ASSY
- S701 : TIME
- S702 : REPEAT
- S703 : RANDOM
- S704 : POWER STANDBY/ON
- S705 : DISPLAY OFF
- S706 : EDIT
- S707 : PEAK SEARCH

SW BOARD ASSY
- S751 : OUTPUT. SL
- S752 : ►
- S753 : ❚❚
- S754 : ▲
- S755 : ►► ►►|
- S756 : |◄◄ ◄◄
- S757 : ■

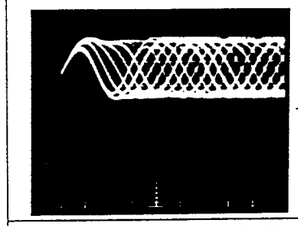
WAVEFORMS

Note: The encircled numbers denote measuring points in the schematic diagram.

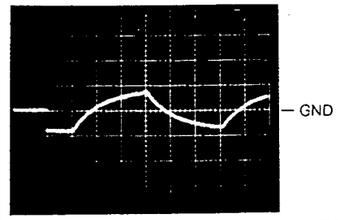
*1 50T-JUMP: After switching to the pause mode, press the manual search key.
*2 FOCUS-IN: Press the key without loading a disc.

*3 Pt
*4 Pt

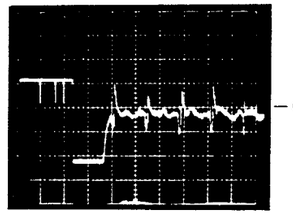
(2) TP1-Pin 1 : PLAY MODE (RF)
500mV/div 500nsec/div



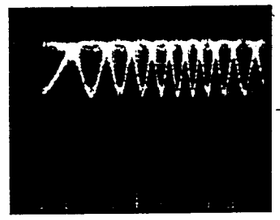
(5) IC202-Pin 9 : FOCUS-IN (*2) MODE (FODR)
1V/div 200msec/div



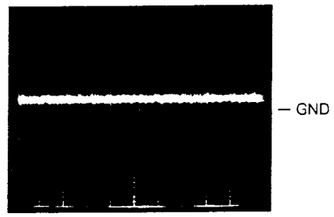
(7) IC202-Pin 4 : TRACK SEARCH MODE (SPDR)
2V/div 50msec/div



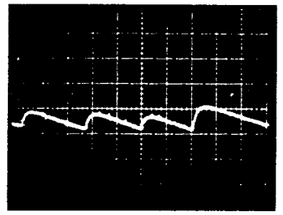
(2) TP1-Pin 1 : TRACK SEARCH MODE (RF)
500mV/div 200 μ sec/div



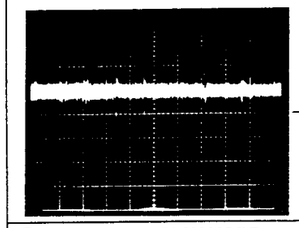
(5) IC202-Pin 9 : PLAY MODE (FODR)
1V/div 1msec/div



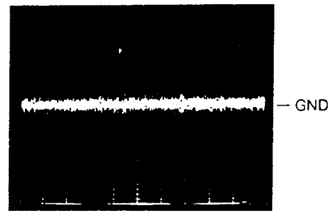
(8) IC201-Pin 4 : PLAY MODE (CADR)
200mV/div 2sec/div



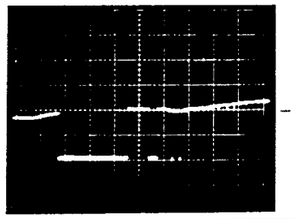
(3) TP1-Pin 6 : PLAY MODE (FOER)
100mV/div 10msec/div



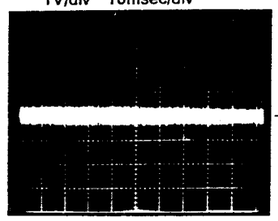
(6) IC202-Pin 3 : PLAY MODE (TRDR)
500mV/div 1msec/div



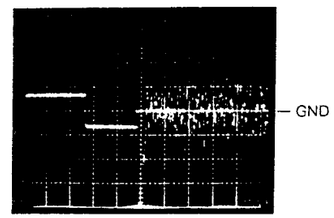
(8) IC201-Pin 4 : TRACK SEARCH MODE (CADR)
2V/div 500msec/div



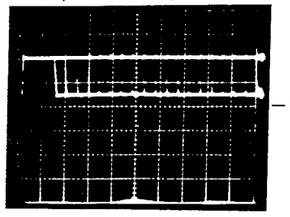
(4) TP1-Pin 2 : PLAY MODE (TRER)
1V/div 10msec/div



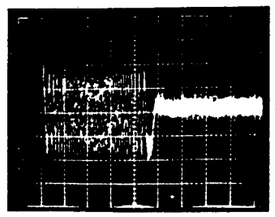
(6) IC202-Pin 3 : 50T-JUMP (*1) MODE (TRDR)
500mV/div 1msec/div



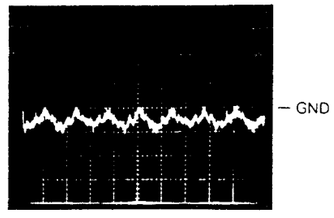
(9) IC151-Pin 32 : PLAY MODE (EFM)
2V/div 500nsec/div



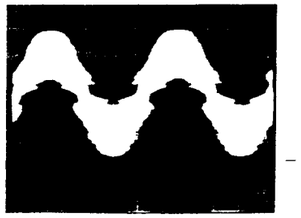
(4) TP1-Pin 2 : 50T-JUMP (*1) MODE (TRER)
1V/div 1msec/div



(7) IC202-Pin 4 : PLAY MODE (SPDR)
1V/div 50msec/div



(10) IC832-Pin 12 : PLAY MODE (1kHz) (LO –) (D/A DATA OUT)
1V/div 200 μ sec/div



WAVEFORMS

Note: The encircled numbers denote measuring points in the schematic diagram.

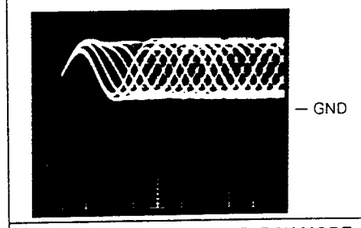
*1 50T-JUMP: After switching to the pause mode, press the manual search key.

*2 FOCUS-IN: Press the key without loading a disc.

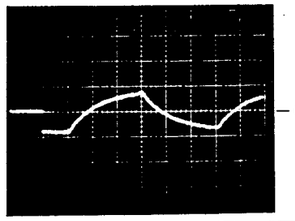
*3 POWER ON: Plug AC cord into AC wall socket.

*4 POWER OFF: Unplug AC cord form AC wall socket.

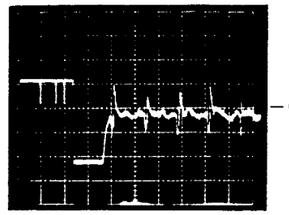
(2) TP1 - Pin 1 : PLAY MODE
(RF)
500mV/div 500nsec/div



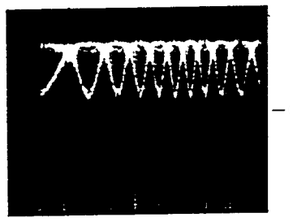
(5) IC202 - Pin 9 : FOCUS-IN (*2) MODE
(FODR)
1V/div 200msec/div



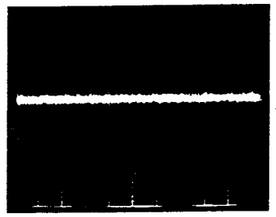
(7) IC202 - Pin 4 : TRACK SEARCH MODE
(SPDR)
2V/div 50msec/div



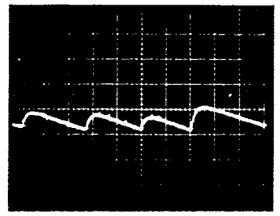
(2) TP1 - Pin 1 : TRACK SEARCH MODE
(RF)
500mV/div 200 µsec/div



(5) IC202 - Pin 9 : PLAY MODE
(FODR)
1V/div 1msec/div



(8) IC201 - Pin 4 : PLAY MODE
(CADR)
200mV/div 2sec/div

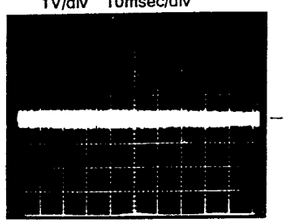


(3) TP1 - Pin 6 : PLAY MODE
(FOER)
100mV/div 10msec/div

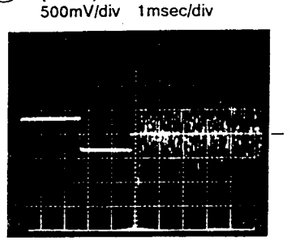
(6) IC202 - Pin 3 : PLAY MODE
(TRDR)
500mV/div 1msec/div

(8) IC201 - Pin 4 : TRACK SEARCH MODE
(CADR)
2V/div 500msec/div

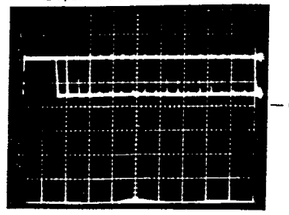
(4) TP1 - Pin 2 : PLAY MODE
(TRER)
1V/div 10msec/div



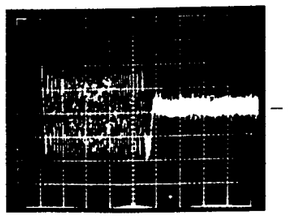
(6) IC202 - Pin 3 : 50T-JUMP (*1) MODE
(TRDR)
500mV/div 1msec/div



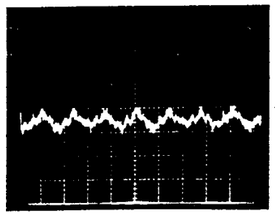
(9) IC151 - Pin 32 : PLAY MODE
(EFM)
2V/div 500nsec/div



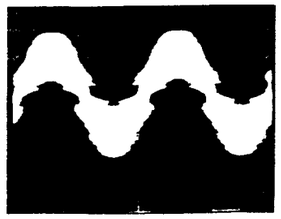
(4) TP1 - Pin 2 : 50T-JUMP (*1) MODE
(TRER)
1V/div 1msec/div



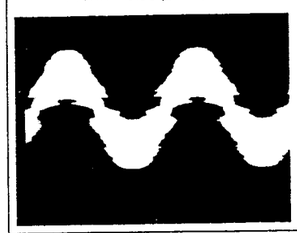
(7) IC202 - Pin 4 : PLAY MODE
(SPDR)
1V/div 50msec/div



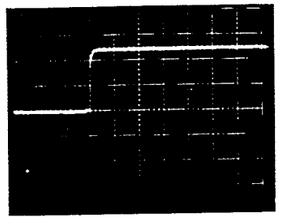
(10) IC832 - Pin 12 : PLAY MODE (1kHz)
(LO –) (D/A DATA OUT)
1V/div 200 µsec/div



(11) IC832 - Pin 13 : PLAY MODE (1kHz)
(LO+)(D/A DATA OUT)
1V/div 200 µsec/div

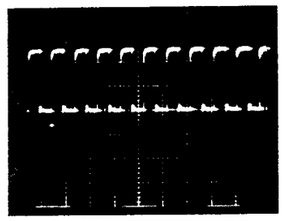


(22) IC351 - Pin 1 : POWER ON(*3)
(REST)
2V/div 100msec/div

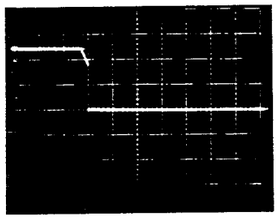


(26)

(16) IC301 - Pin 35 : PLAY MODE (1kHz)
(BCLK)
2V/div 500nsec/div



(22) IC351 - Pin 1 : POWER OFF(*4)
(REST)
2V/div 100msec/div



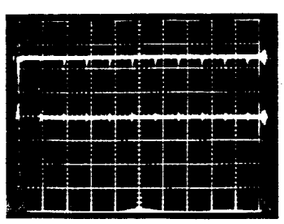
(27)

(18) IC301 - Pin 32 : PLAY MODE (1kHz)
(LRCK)
2V/div 10 µsec/div

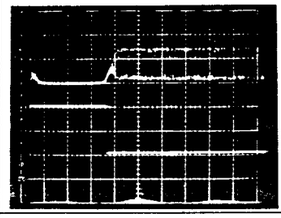
(23) : TRACK SEARCH MODE
Upper : TP1 - Pin 1 (RF) 1V/div
Lower : IC151 - Pin 29 (MIRR)
2V/div 200 µsec/div

(28)

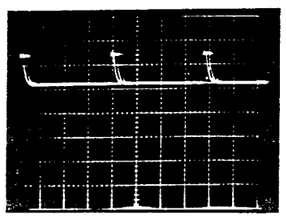
(19) IC301 - Pin 34 : PLAY MODE (1kHz)
(DATA)
2V/div 500nsec/div



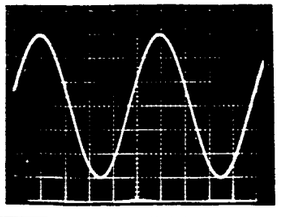
(24) : PLAY MODE
Upper : TP1 - Pin 1 (RF) 1V/div
Lower : IC151 - Pin 30 (DFCT)
5V/div 200 µsec/div



(33) IC301 - Pin 4 : PLAY MODE
(MDP)
2V/div 2 µsec/div

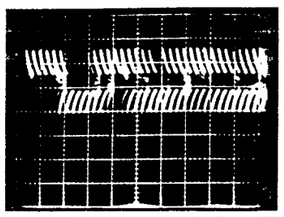


(21) PIN - OUTPUT : PLAY MODE(1kHz)
1V/div 200 µsec/div

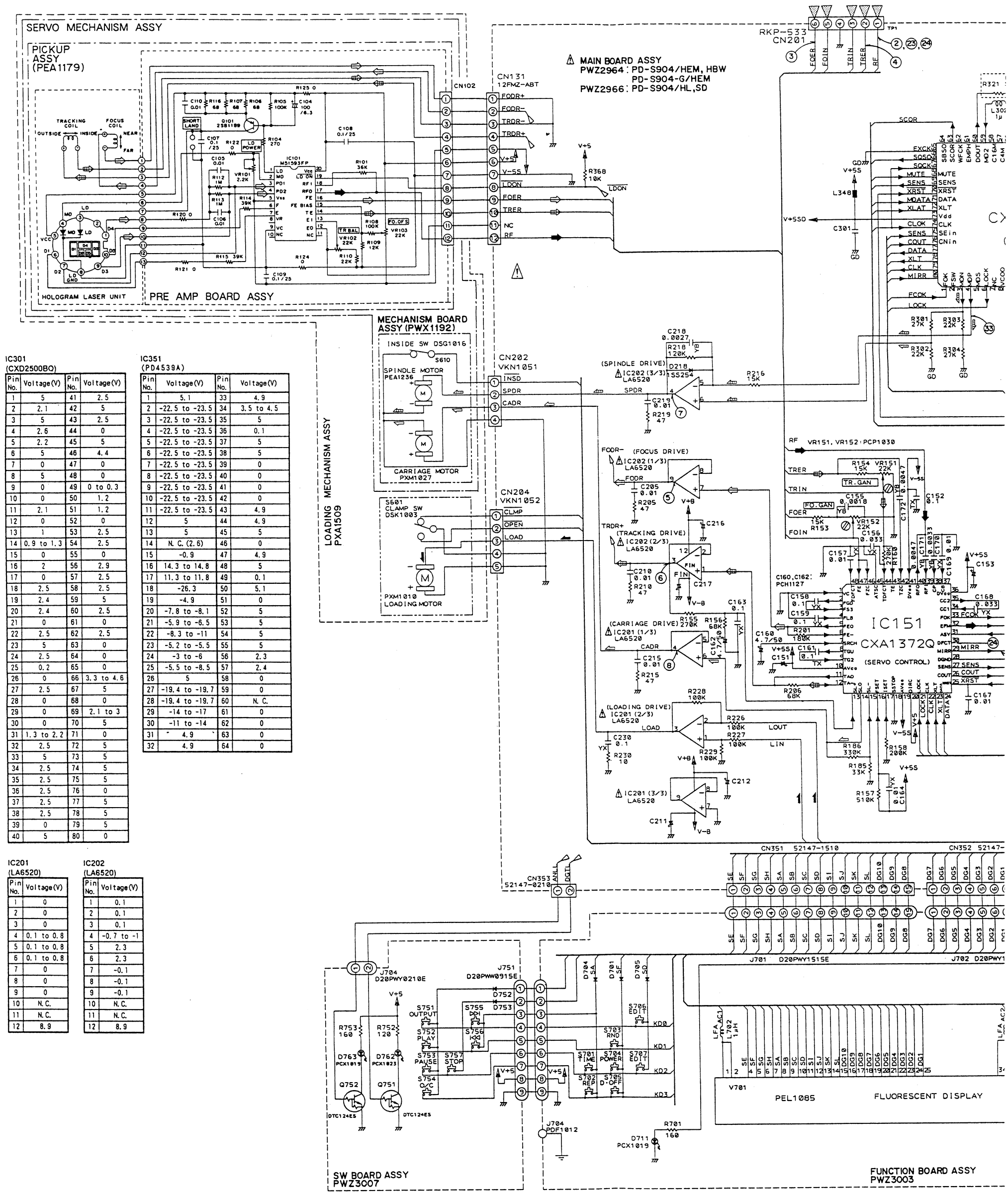


(25)

(53) IC301 - Pin 20 : PLAY MODE
(PCO)
2V/div 10 µsec/div



4.1 MAIN BOARD, SW BOARD, FUNCTION BOARD, COAXIAL OUTPUT BOARD, AUDIO TRANS BOARD, SERVO TRANS BOARD, AND PICKUP ASSY



IC301 (CXD2500BQ)

Pin No.	Voltage(V)	Pin No.	Voltage(V)
1	5	41	2.5
2	2.1	42	5
3	5	43	2.5
4	2.6	44	0
5	2.2	45	5
6	5	46	4.4
7	0	47	0
8	5	48	0
9	0	49	0 to 0.3
10	0	50	1.2
11	2.1	51	1.2
12	0	52	0
13	1	53	2.5
14	0.9 to 1.3	54	2.5
15	0	55	0
16	2	56	2.9
17	0	57	2.5
18	2.5	58	2.5
19	2.4	59	5
20	2.4	60	2.5
21	0	61	0
22	2.5	62	2.5
23	5	63	0
24	2.5	64	0
25	0.2	65	0
26	0	66	3.3 to 4.6
27	2.5	67	5
28	0	68	0
29	0	69	2.1 to 3
30	0	70	5
31	1.3 to 2.2	71	0
32	2.5	72	5
33	5	73	5
34	2.5	74	5
35	2.5	75	5
36	2.5	76	0
37	2.5	77	5
38	2.5	78	5
39	0	79	5
40	5	80	0

IC351 (PD4539A)

Pin No.	Voltage(V)	Pin No.	Voltage(V)
1	5.1	33	4.9
2	-22.5 to -23.5	34	3.5 to 4.5
3	-22.5 to -23.5	35	5
4	-22.5 to -23.5	36	0.1
5	-22.5 to -23.5	37	5
6	-22.5 to -23.5	38	5
7	-22.5 to -23.5	39	0
8	-22.5 to -23.5	40	0
9	-22.5 to -23.5	41	0
10	-22.5 to -23.5	42	0
11	-22.5 to -23.5	43	4.9
12	5	44	4.9
13	5	45	5
14	N. C. (2.6)	46	0
15	-0.9	47	4.9
16	14.3 to 14.8	48	5
17	11.3 to 11.8	49	0.1
18	-26.3	50	5.1
19	-4.9	51	0
20	-7.8 to -8.1	52	5
21	-5.9 to -6.5	53	5
22	-8.3 to -11	54	5
23	-5.2 to -5.5	55	5
24	-3 to -6	56	2.3
25	-5.5 to -8.5	57	2.4
26	5	58	0
27	-19.4 to -19.7	59	0
28	-19.4 to -19.7	60	N. C.
29	-14 to -17	61	0
30	-11 to -14	62	0
31	4.9	63	0
32	4.9	64	0

IC201 (LA6520)

Pin No.	Voltage(V)
1	0
2	0
3	0
4	0.1 to 0.8
5	0.1 to 0.8
6	0.1 to 0.8
7	0
8	0
9	0
10	N.C.
11	N.C.
12	8.9

IC202 (LA6520)

Pin No.	Voltage(V)
1	0.1
2	0.1
3	0.1
4	-0.7 to -1
5	2.3
6	2.3
7	-0.1
8	-0.1
9	-0.1
10	N.C.
11	N.C.
12	8.9

SCH-1

SW BOARD ASSY, MAIN BOARD ASSY
COAXIAL OUTPUT BOARD ASSY
SERVO TRANS BOARD ASSY, PICKUP ASSY
FUNCTION BOARD ASSY

SCH-1

SIGNAL ROUTE
- ⇨ : FOCUS SERVO LOOP LINE
- ⇨ : TRAKING SERVO LOOP LINE
- ➡ : AUDIO SIGNAL ROUTE
- ▬ : LOADING MOTOR ROUTE
- ▬ : SPINDLE MOTOR ROUTE
- ▬ : CARRIAGE SERVO LOOP LINE

IC301
CXD2500BQ
(DECODER)

IC351
PD4539A
(SYSTEM CONTROL)

IC20
M5298P

OPTICAL OUT
JA301 TOTX178
HEM, HBW
J302 DTWW0205E
IC331 MC74HCU04N
L334 PTL1003
JA331 RKB1019
PBK1016
R333 75
COAXIAL OUT
J331 D20PWY0310E
COAXIAL OUTPUT BOARD ASSY
PWZ2986
CN301 52147-0310
IC421 NJM7805FA
CN851 B2B-EH
J401 PF02EN-S15
J301 D20PWY1515E
CN801 52147-1510
AUDIO BOARD ASSY
(➡SCH-2)
CN902 B2B-EH
CN901 B3B-EH
J352 52147-1510
J703 D20PWY0315E
J702 D20PWY1520E
CN51 52147-0310
J22 D20PWY1030E
CN11 52147-1010
REMOTE SENSOR SBX1785-51
TEST MODE
DECK SYNCHRO JACK
JA393 PKN1005
Q391 2SC1740S
JA392 RKN1004
SR JACK
JA391 RKN1004
IN
OUT
L341, L343, L344, L346
L347, L348, L349, L350 VTH1024
L342: PTH1007
L345: PTH1008
VTH1013
VTH1024
HEM, HBW
SD, HL
DGTL
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE No. ICP-N10, MFD BY ROHM CO., LTD. FOR IC32.

AUDIO TRANS BOARD ASSY
PWZ2995: PD-S904/HL
AC POWER CORD
PDG1003
SERVO TRANS BOARD ASSY
PWZ2923: PD-S904/HL
PSB1006
PWZ2630
PTT1242
PTT1243
VOLTAGE SW BOARD ASSY
S5, S6: PSB1006
J10 PDF1136
J13 PDF1138
J14 PDF1140
J17 PDF1139
J18 PDF1141

AUDIO TRANS BOARD ASSY
PWZ2993: PD-S904/HEM, HBW
PD-S904-G/HEM
AC POWER CORD
HEM: PDG1003
HBW: PDG1055
SERVO TRANS BOARD ASSY
PWZ2921: PD-S904/HEM, HBW
PD-S904-G/HEM

AUDIO TRANS BOARD ASSY
PWZ2996: PD-S904/SD
AC110V/120-127V
220V/240V
50/60Hz
VOLTAGE SELECTOR
AC POWER CORD
PDG1056
PWZ2996
PSB1002
240V: J12 PDF1098
220V: J13 PDF1096
120~127V: J14 PDF1095
110V: J15 PDF1097
SERVO TRANS BOARD ASSY
PWZ2924: PD-S904/SD
PSB1002
240V: J16 PDF1146
220V: J17 PDF1145
120~127V: J18 PDF1144
110V: J19 PDF1143

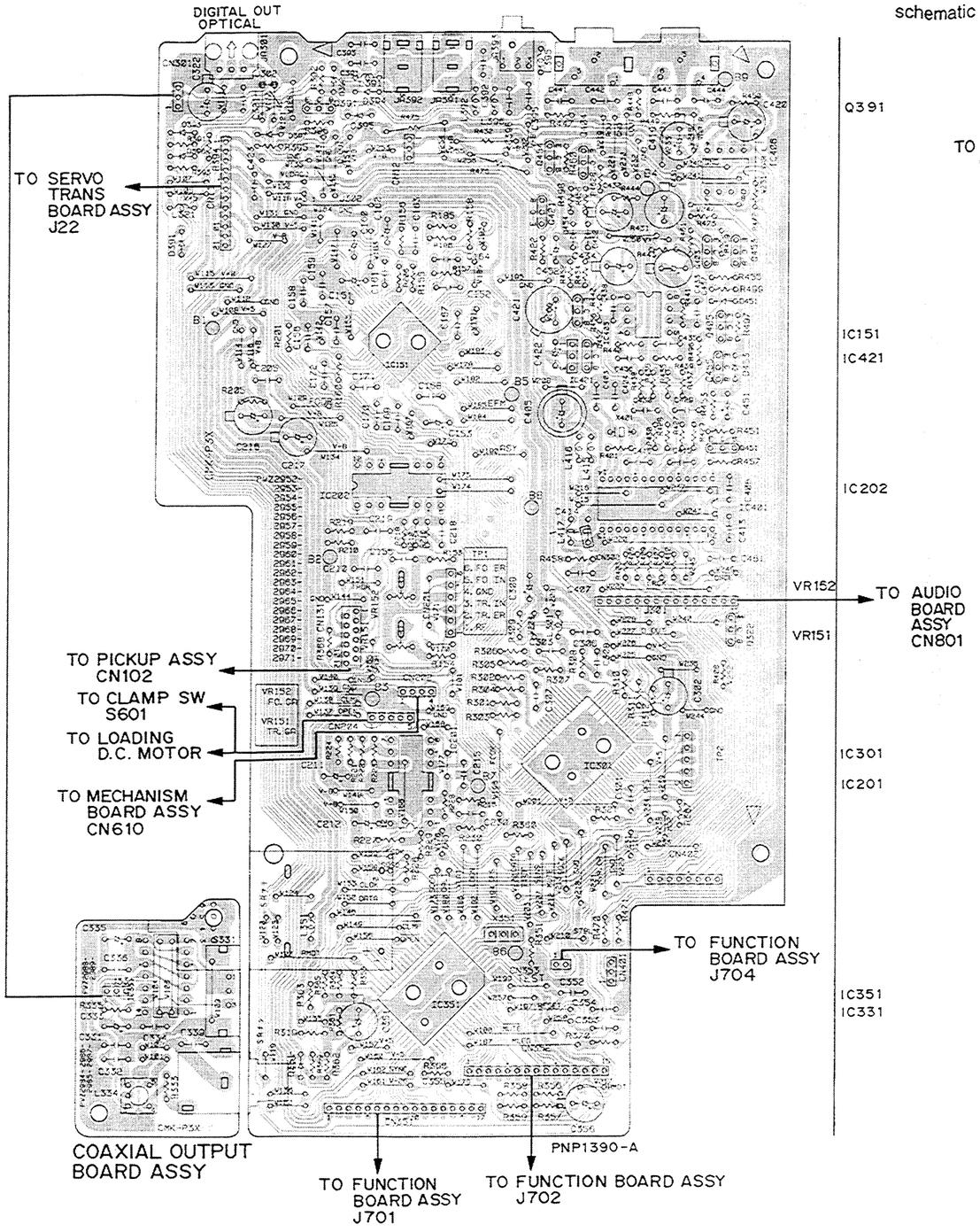
SW BOARD ASSY, MAIN BOARD ASSY
COAXIAL OUTPUT BOARD ASSY
SERVO TRANS BOARD ASSY, PICKUP ASSY
FUNCTION BOARD ASSY

SCH-1

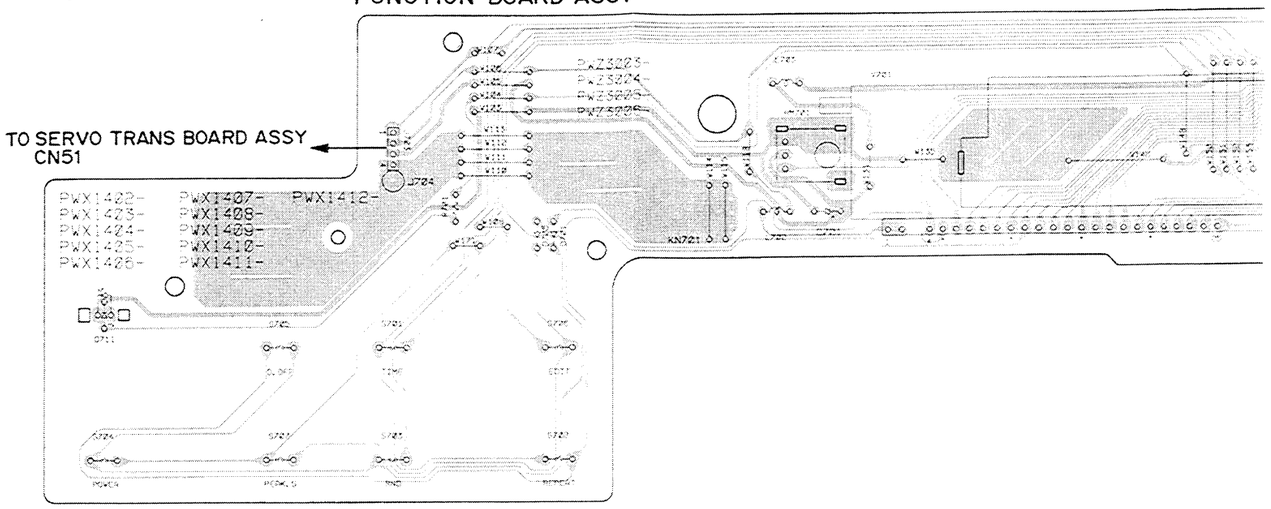
● This diagram is viewed from the mounted parts side.

• The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

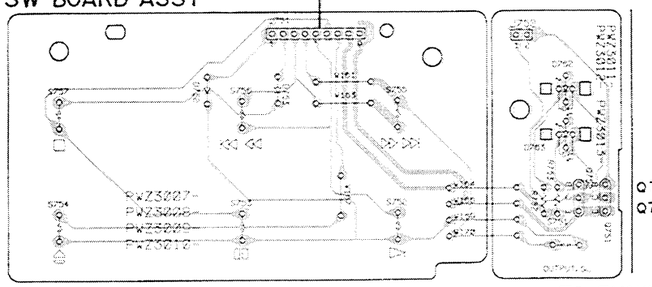
MAIN BOARD ASSY



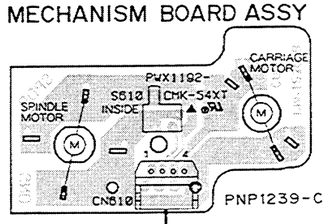
FUNCTION BOARD ASSY



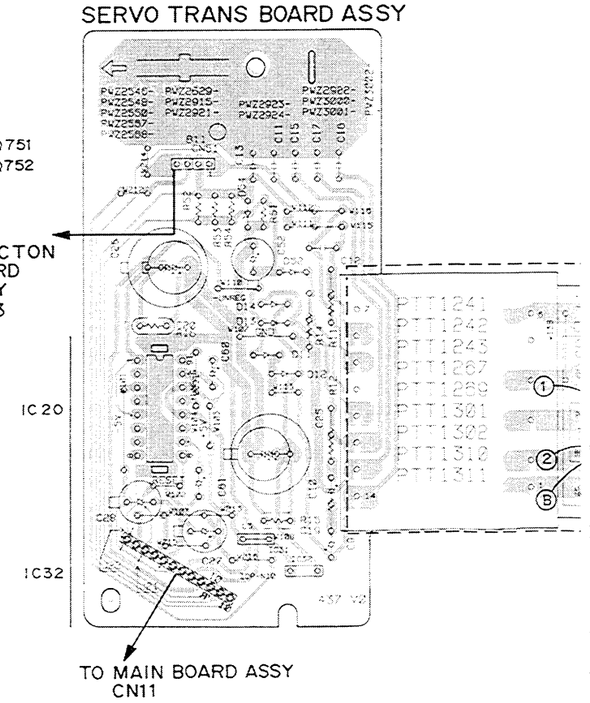
SW BOARD ASSY



MECHANISM BOARD ASSY

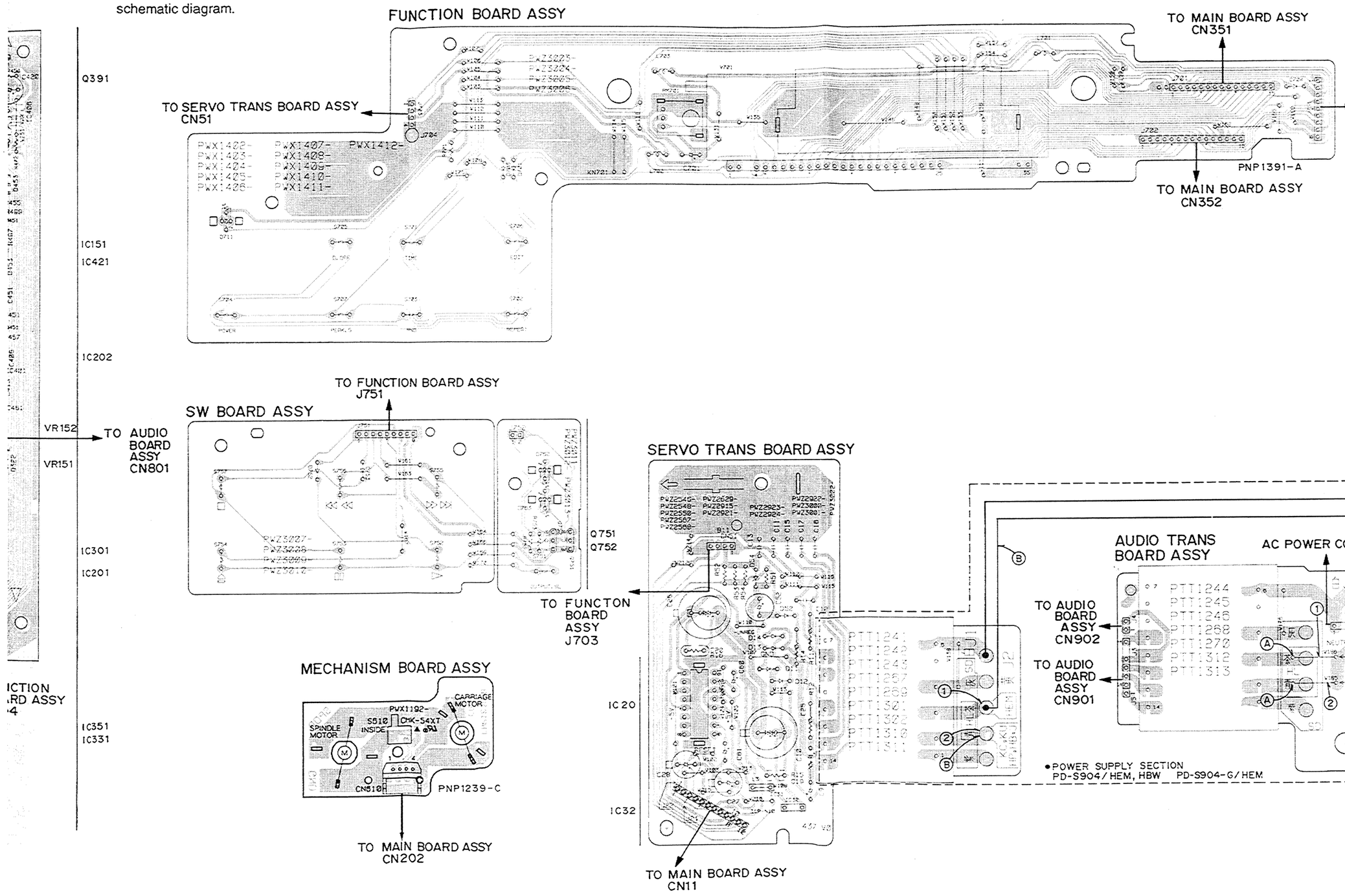


SERVO TRANS BOARD ASSY



PCB-1

- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

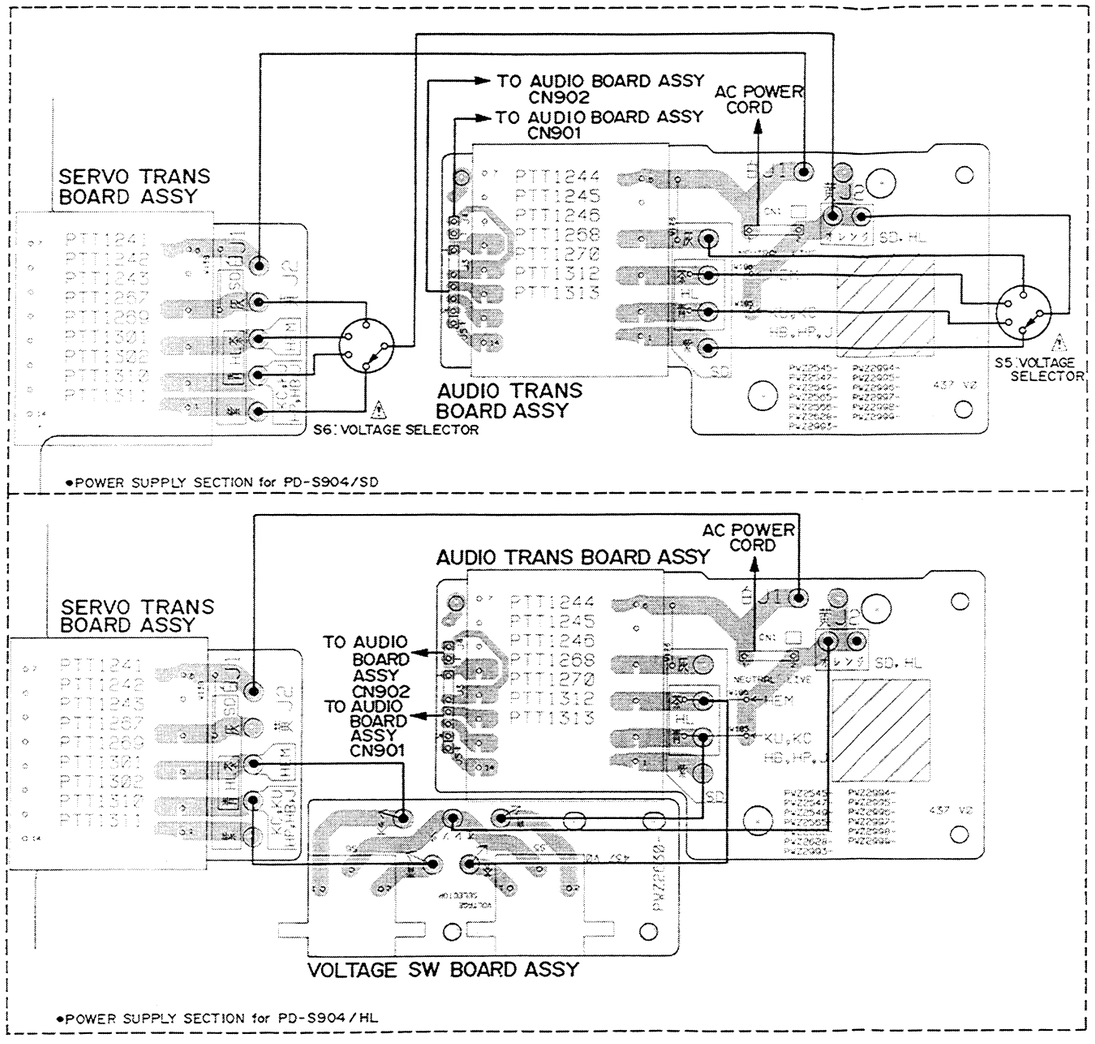


NOTE FOR PCB DIAGRAMS

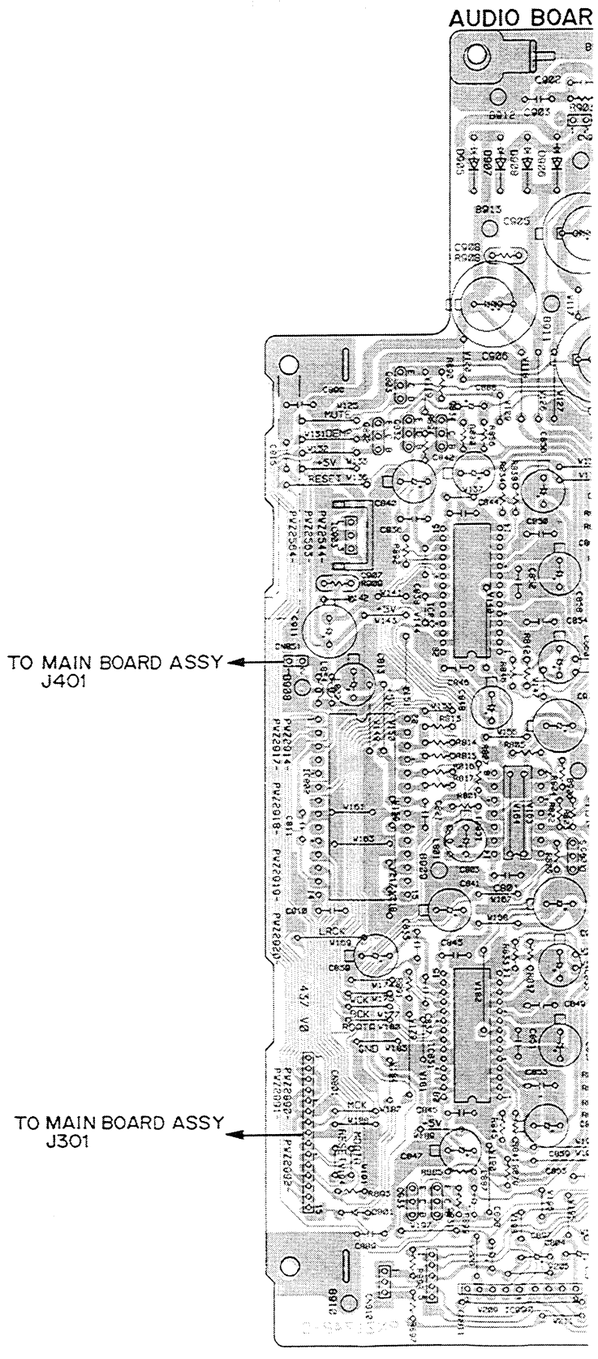
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
B C E	B C E	Transistor
B C E	B C E	Transistor with resistor
D G S	D G S	Field effect transistor
		Resistor array
		3- terminal regulator

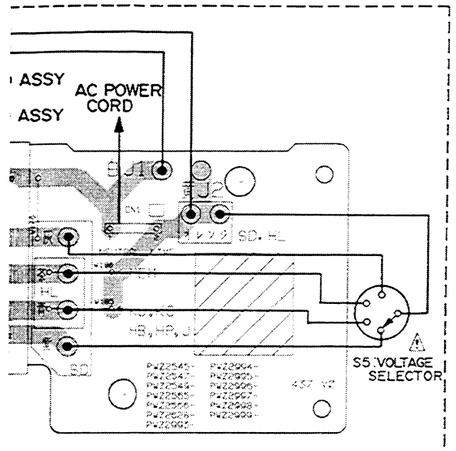
● This diagram is viewed from the mounted parts side.


TO AUDIO BOARD ASSY CN902
TO AUDIO BOARD ASSY CN901
AC POWER CORD
SERVO TRANS BOARD ASSY
AUDIO TRANS BOARD ASSY
S6: VOLTAGE SELECTOR
S5 VOLTAGE SELECTOR
•POWER SUPPLY SECTION for PD-S904/SD
AC POWER CORD
AUDIO TRANS BOARD ASSY
SERVO TRANS BOARD ASSY
TO AUDIO BOARD ASSY CN902
TO AUDIO BOARD ASSY CN901
VOLTAGE SW BOARD ASSY
•POWER SUPPLY SECTION for PD-S904/HL

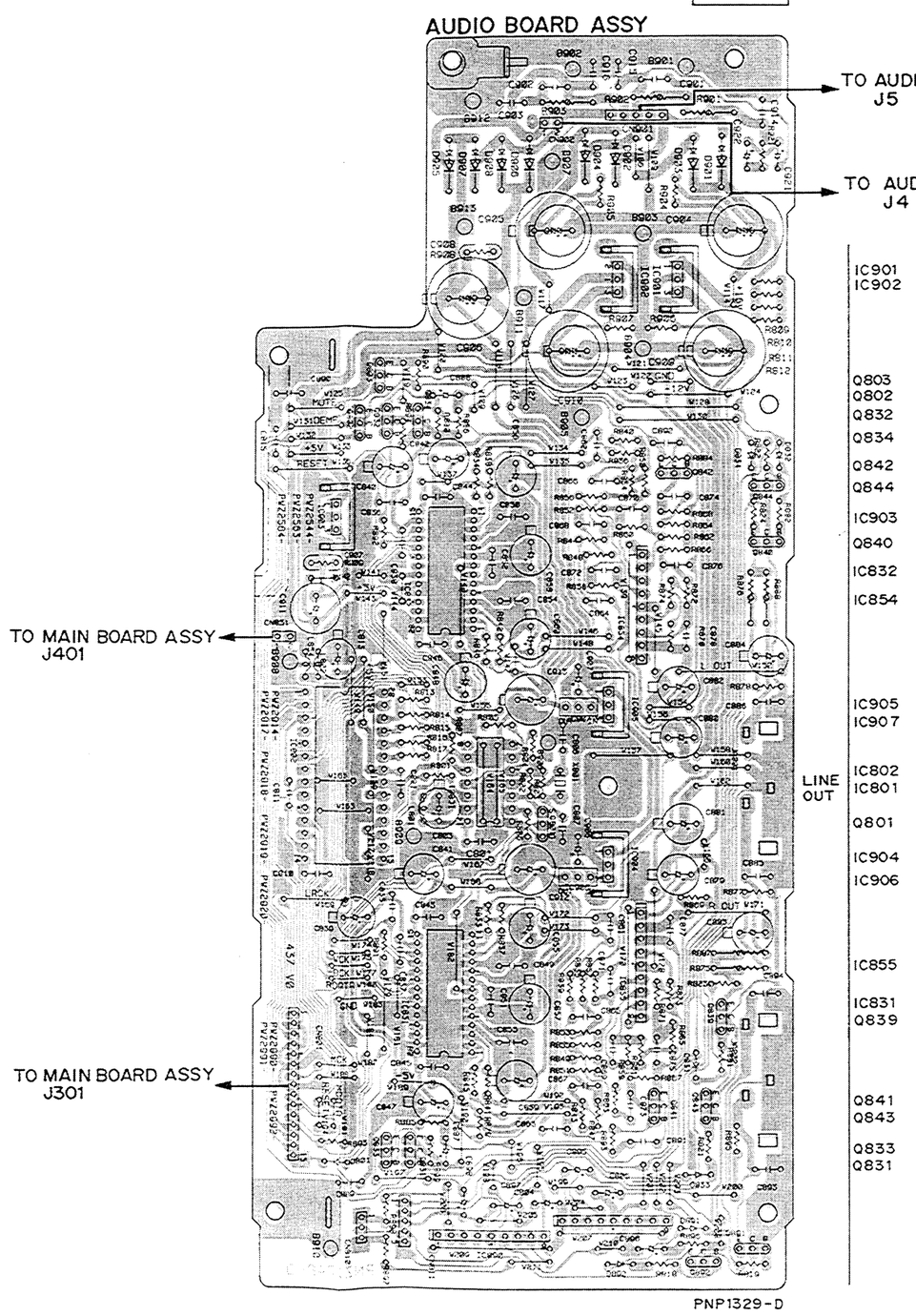
4.2 AUDIO BOARD ASSY



4.2 AUDIO BOARD ASSY



PCB-2



- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

AUDIO BOARD ASSY
PWZ2917 : PD-S904/HEM, HBW
PD-S904-G/HEM
PWZ2919 : PD-S904/HL, SD

SIGNAL ROUTE
➡ : AUDIO SIGNAL ROUTE

SCH-2

TO MAIN BOARD ASSY (SCH-1)

CN801 52147-1510

J301 D20PWY1515E

L852 VTH1013

Q802 DTA124ES

R890 100K

DEMP

V+5D

V-15

L853 VTH1024

Q801 2SK246

D801 1SS254

J401 PF02EN-S15

CN851 82B-EH

V+5F

X801 PSS1008 16.9344MHz

IC801 : INVERTER

IC801 : TC74HCU04AP

IC801 (1/6)

IC801 (2/6)

IC801 (3/6)

IC801 (4/6)

IC801 (5/6)

IC801 (6/6)

V+16

DTC124ES Q803

L851 VTH1013

MUTE

Q803 : LINE MUTE

BCK

DATA

LRCK

IC802 : DIGITAL FILTER

IC802 PD7009A

DIN BCKI VDDI DITH CKEN XTI XTO VSS1 CKO CKS MDCK MDT MDLE RST

LRCI MDS BCKO WCKO DOL DOR VDD2 VSS2 ASEL1 OBS AMS2 AMS1 DEEM LRS

BKOR WCKO LDTA RDTA

IC831, IC832 : D/A CONVERTER

IC831 PD2028B

VDA VDD RST LZ WCKO BCKO DLI DRI M1 M2 RZ MCK GD VDA

GA LO+ LO- GA VDA GX XI XO VDX VDA GA RO+ RO- GA

WCKO BKOL LDTA

V+5L V+5R

IC855 (1/2)

NJM5532SD IC854 (1/2)

NJM5532SD IC855 (2/2)

Q840 : LIN MUTE

Q839 : LINE MUTE

Q842 2SC3068

Q843 2SC3068

Q844 2SC3068

Q832 DTA124ES

Q833 DTC124ES

Q834 DTC124ES

PKB1010 JA801 (1/2)

PKB1010 JA801 (2/2)

Q840 2SC3068

Q839 2SC3068

MUTE

DEMP

V+15

V-15

TO AUDIO TRANS BOARD ASSY (SCH-1)

CN901 B3B-EH

CN902 B2B-EH

J5

J4

D901-D908 : 11ES2

IC901 NJM7815FA

IC902 NJM7915FA

IC903 NJM7805FA

IC904 NJM7806FA

IC905 NJM2930L05

IC906 NJM7806FA

IC907 NJM2930L05

V+5D

V+5L

V+5R

V-15

L856 PTH1006

L855 PTH1016

C890 0.047

IC802
(PD7009A)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	2.5	15	N.C. (5)
2	2.4	16	N.C. (5)
3	5	17	N.C. (5)
4	N.C. (5)	18	0
5	N.C. (5)	19	N.C. (5)
6	2.5	20	5
7	N.C. (2.5)	21	0
8	0	22	5
9	N.C. (3)	23	2.1
10	N.C. (5)	24	2.1
11	4.9	25	2.5
12	4.9	26	2.3
13	4.9	27	0
14	4.9	28	2.5

IC831,832
(PD2028B)

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	0	15	5.1
2	2.5	16	5.1
3	2.2	17	4.9
4	0	18	0
5	5.1	19	2.5
6	5.1	20	2.2
7	N.C. (2.3)	21	2.3
8	2.4	22	2.3
9	0	23	0
10	5.1	24	0
11	0	25	N.C. (0)
12	2.2	26	N.C. (3.4)
13	2.5	27	0
14	0	28	5.1

IC801
(TC74HCU04AP)

Pin No.	Voltage (V)
1	2.3
2	2.4
3	2.2
4	2.4
5	2.3
6	2.4
7	0
8	N.C. (4.8)
9	0
10	2.5
11	2.3
12	2.5
13	2.3
14	4.8

IC854,855
(NJM5532SD)

Pin No.	Voltage (V)
1	12.1
2	0
3	1.3
4	1.3
5	-12.2
6	0
7	0
8	0
9	12.1

5. PCB PARTS LIST

NOTES:

- Parts marked by "NSP"are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by " ⊙ "are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47K ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × 10^1 → 561 ····· RD1/8PM 5 6 1 J
47k Ω → 47 × 10^3 → 473 ····· RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ····· RN2H 0 R 5 K
1 Ω → 010 ····· RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × 10^1 → 5621 ····· RN1/4PC 5 6 2 1 F

LIST OF WHOLE PCB ASSEMBLES

Mark	Symbol & Description	Part No. PD-S904/HBW	PD-S904/HEM	PD-S904/HL	PD-S904/SD	PD-S904-G/HEM	Remarks
NSP	ANALOG BOARD	PWM1920	PWM1920	PWM1922	PWM1923	PWM1920	
	├AUDIO BOARD ASSY	PWZ2917	PWZ2917	PWZ2919	PWZ2919	PWZ2917	
	├SERVO TRANS BOARD ASSY	PWZ2921	PWZ2921	PWZ2923	PWZ2924	PWZ2921	
	├AUDIO TRANS BOARD ASSY	PWZ2993	PWZ2993	PWZ2995	PWZ2996	PWZ2993	
	└VOLTAGE SW BOARD ASSY	Not Used	Not Used	PWZ2630	Not Used	Not Used	
NSP	MOTHER BOARD ASSY	PWM1959	PWM1959	PWZ1961	PWM1961	PWM1959	
	├MAIN BOARD ASSY	PWZ2964	PWZ2964	PWZ2966	PWZ2966	PWZ2964	
NSP	└COAXIAL OUTPUT BOARD ASSY	PWZ2986	PWZ2986	Not Used	Not Used	PWZ2986	
NSP	SUB BOARD ASSY	PWX1402	PWX1402	PWX1402	PWX1402	PWX1402	
NSP	├FUNCTION BOARD ASSY	PWZ3003	PWZ3003	PWZ3003	PWZ3003	PWZ3003	
NSP	└SW BOARD ASSY	PWZ3007	PWZ3007	PWZ3007	PWZ3007	PWZ3007	
NSP	LOARDING MECHANISM ASSY TT	PXA1521	PXA1521	PXA1521	PXA1521	PXA1521	
NSP	└SERVO MECHANISM ASSY TT92	PXA1479	PXA1479	PXA1479	PXA1479	PXA1479	
NSP	└MECHANISM BOARD ASSY	PWX1192	PWX1192	PWX1192	PWX1192	PWX1192	

■ PARTS LIST FOR PD-S904/HBW

AUDIO BOARD ASSY

Mark	No.	Description	Parts No.
		SEMICONDUCTORS	
	IC906, IC907		NJM2930L05
	IC854, IC855		NJM5532SD
	IC903		NJM7805FA
	IC904, IC905		NJM7806FA
	IC901		NJM7815FA
	IC902		NJM7915FA
	IC831, IC832		PD2028B
	IC802		PD7009A
	IC801		TC74HCU04AP
	Q839-Q844		2SC3068
	Q801		2SK246
	Q802, Q831, Q832		DTA124ES
	Q803, Q833, Q834		DTC124ES
⚠	D901-D908		11ES2
	D801, D831-D834		1SS254
		COILS AND FILTERS	
	L854		LAU010J
	L856		PTH1006
	L855		PTH1016
	L851, L852		VTH1013
	L853		VTH1024
		CAPACITORS	
	C806, C807		CCCCH120J50
	C861-C864		CCCCH181J50
	C865-C868		CCCCH330J50
	C869-C872, C925, C926		CCCCH470J50
	C802		CCCSL101J50
	C883, C884		CEGA101M50
	C909, C910		CEGA221M50
	C916, C917		CEGA470M25
	C813		CEZA101M25
	C803		CEZA221M25
	C912, C913		CEZA471M25
	C906		CEZA472M16
	C921, C922		CEZA4R7M50
	C891, C892		CFTXA103J50
	C821, C890		CFTXA473J50
	C875, C876		CFTXA562J50
	C877, C878		CFTXA681J50
	C873, C874		CFTXA683J50
	C810, C907		CGCYX473K25
	C811		CKCYB102K50
	C814, C815, C835, C836, C903		CKCYF103Z50
	C914, C915, C918		CKCYF103Z50
	C901, C902, C951, C952		CMA181J500
	C837, C838, C851, C852		CQMA104J50
	C843-C846, C849, C850		CQMA822J50
	C853, C854		CQMA822J50
	C885, C886		CQPA102J100
	C801		CQPA153J100
	C841, C842, C847, C848 (470μF/6.3V)		PCH1123
	C855, C856, C859, C860 (470μF/6.3V)		PCH1123
	C904, C905 (3300/25)		PCH1125
	C879-C882 (100/50)		PCH1126
	C887, C888 (4.7/50)		PCH1127
	C839, C840, C857, C858, C911, (220/25)		PCH1128
		RESISTORS	
	R875, R876		RDR1/4PM181J
	Other Resistors		RD1/6PM□□□J
		OTHERS	
	CN801 15P JAMPER CONNECTOR		52147-1510
	CN851, CN902 2P TOP POST		B2B-EH
	CN901 3P TOP POST		B3B-EH
	JA801 JACK		PKB1010
	X801 XTAL RES(16.9344MHz)		PSS1008
	PCB BINDER		VEF1008
	EARTH PLATE		VNF-091

SERVO TRANS BOARD

Mark	No.	Description	Parts No.
		SEMICONDUCTORS	
⚠	IC32		ICP-N10
⚠	IC20		M5298P
⚠	D11-D14, D52		11ES2
	D54		MTZJ18B
		COILS AND FILTERS	
	L13 (0.15/30)		RTF1068
	L11		VTH1013
		CAPACITORS	
	C60		CEAS010M50
	C54		CEAS101M50
	C52		CEAS471M35
	C10, C9		CEZA4R7M50
	C31		CGCYX473K25
	C11, C13, C15, C16, C17		CKCYF103Z50
	C32		CMA181J500
	C12, C57		CMA470J500
	C55		CQMA154J50
	C25, C26 (4700μF/16V)		PCH1119
	C27, C28 (220μF/25V)		PCH1128
		RESISTORS	
	R55		RD1/2PM3R3J
	Other Resistors		RD1/6PM□□□J
		OTHERS	
	CN51 3P JUMPER CONNECTOR		52147-0310
⚠	HEAT SINK		PNB1233
	PCB BINDER		VEF1008
	EARTH PLATE		VNF-091

MAIN BOARD ASSY

Mark	No.	Description	Parts No.
		SEMICONDUCTORS	
	IC151		CXA1372Q
	IC301		CXD2500BQ
⚠	IC201, IC202		LA6520
	IC421		NJM7805FA
	IC351		PD4539A
	Q391		2SC1740S
	D218, D351, D395-D397		1SS254
		COILS AND FILTERS	
	L301-L303, L395, L396		LAU010J
	L345		PTH1008
	L321 (0.15mH)		RTF1068
	L341, L343, L349, L350		VTH1024
		CAPACITORS	
	C397, C398		CCCSL101J50
	C341, C342		CEAS101M50
	C309		CEASR47M50
	C216, C217, C303		CEZA101M25
	C301, C351, C405		CEZA331M25
	C152, C161, C321, C352, C407		CFTXA104J50
	C422		CFTXA104J50
	C157, C164, C169, C308		CGCYX103K25
	C158, C159, C163, C230		CGCYX104K25
	C156, C168		CGCYX333K25
	C307		CGCYX473K25
	C306		CKCYB152K50
	C155		CKCYB182K50
	C170		CKCYB332K50
	C171, C172		CKCYB472K50

Mark	No.	Description	Parts No.
	C167, C205, C210, C215, C219		CKCYF103Z50
	C353		CQPA153J100
	C218		CQPA272J100
	C211	(1000μF/16V)	PCH1122
	C151, C153, C302, C322	(470μF/6.3V)	PCH1123
	C160, C162	(4.7μF/50V)	PCH1127
	C212	(220μF/25V)	PCH1128
RESISTORS			
	VR151, VR152	(22kΩ/0.1W)	PCP1030
	Other Resistors		RD1/6PM□□□J
OTHERS			
	CN131	12P CONNECTOR	12FMZ-ABT
	CN202	4P CONNECTOR	173981-4
	CN204	5P CONNECTOR	173981-5
	CN353	2P JUMPER CONNECTOR	52147-0210
	CN301	3P JUMPER CONNECTOR	52147-0310
	CN11	10P JUMPER CONNECTOR	52147-1010
	CN351	15P JUMPER CONNECTOR, CN352	52147-1510
	J401	CONNECTOR	PF02EN-S15
	JA393	MINI JACK	PKN1005
	CN201	6P CONNECTOR	RKP-533
	JA301	OPTICAL OUTPUT JACK	TOTX178
		PCB BINDER	VEF1008
	X351	CERAMIC RESONATOR(4.19MHz)	VSS1014

COAXIAL OUTPUT BOARD ASSY

Mark	No.	Description	Parts No.
SEMICONDUCTORS			
	IC331		MC74HCU04N
COILS AND FILTERS			
	L334		PTL1003
CAPACITORS			
	C335		CEAS470M25
	C334		CFTXA103J50
	C336, C339		CFTXA104J50
	C331		CKCYF103Z50
	C333	(100μF/50V)	PCH1126
RESISTORS			
	All Resistors		RD1/6PM□□□J
OTHERS			
	JA331	1P JACK	RKB1019

AUDIO TRANS BOARD ASSY

Mark	No.	Description	Parts No.
OTHERS			
	J4	CONNECTOR	PF02EN-S15
	J5	CONNECTOR	PF03EN-S15
⚠		TERMINAL	RKC-061

FUNCTION BOARD ASSY

Mark	No.	Description	Parts No.
SEMICONDUCTORS			
	D701, D704, D705		1SS254
	D711		PCX1019
COILS AND FILTERS			
	L701, L702		LFA010K
	L703	(0.15mH)	RTF1068
SWITCHES AND RELAYS			
	S701–S707		PSG1006
CAPACITORS			
	C701		CFTXA104J50
RESISTORS			
	All Resistors		RD1/6PM□□□J
OTHERS			
	V701	(FL INDICATOR TUBE)	PEL1085
		REMOTE SENSOR	SBX1785-51

SWITCH BOARD ASSY

Mark	No.	Description	Parts No.
SEMICONDUCTORS			
	Q751–Q752		DTC124ES
	D763		PCX1019
	D762		PCX1023
SWITCHES AND RELAYS			
	S751–S757		PSG1006
RESISTORS			
	All Resistors		RD1/6PM□□□J
OTHER			
	D752, D753	DIODE	1SS254

MECHANISM BOARD ASSY

Mark	No.	Description	Parts No.
SWITCHES AND RELAYS			
	S610		DSG1016
OTHERS			
	CN610	MT CONNECTOR 4P	173979-4

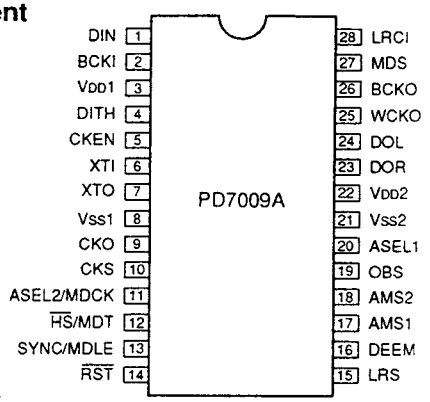
6. IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PD7009A (AUDIO BOARD ASSY, IC802)

DIGITAL FILTER

● Pin Arrangement (Top View)



● Pin Function

Pin No.	Name	i/o	Function
1	DIN	ip	Data input
2	BCKI	ip	Bit clock input
3	VDD1	/	+5V power supply pin 1
4	DITH	ip	Dither ON/OFF selection H : ON, L : OFF
5	CKEN	ip	Operation control of the crystal oscillation circuit H : Oscillation, L : Stop
6	XTI	i	Crystal oscillation circuit input or external clock input
7	XTO	o	Crystal oscillation circuit output
8	Vss1	/	GND pin 1
9	CKO	o	Master clock output
10	CKS	ip	XTI (master clock) input frequency selection H : 384 fs, L : 512 fs
11	ASEL2/MDCK	ip	Operation mode selection 2 when the pin control. (For logic, refer to the attached table.) Clock input for microcomputer data when the microcomputer control.
12	$\overline{HS}$/MDT	ip	Normal speed/double speed selection when the pin control. H : Normal speed, L : Double speed. Data input for microcomputer data when the microcomputer control.
13	SYNC/MDLE	ip	Sync mode selection when the pin control. H : Jitter free, L : Forced sync. Latch enable signal input for microcomputer data when the microcomputer control.
14	$\overline{RST}$	ip	System reset H : Normal operation, L : Reset
15	LRS	ip	LR clock polarity selection LRS \ LRCK: H → Lch, L → Rch; L → Rch, L → Lch
16	DEEM	ip	De-emphasis signal H : ON, L : OFF
17	AMS1	ip	Attenuation amount selection 1.
18	AMS2	ip	Attenuation amount selection 2.

AMS2 \ AMS1	H	L
H	−2.05dB	−1.0dB
L	−0.1dB	−2.55dB

Pin No.	Name	i/o	Function
19	OBS	ip	Output data bit length selection. H : 24-bit parallel output L : 20-bit parallel output
20	ASEL1	ip	Operation mode selection 1. (For logic, refer to the attached table.)
21	VSS2	/	GND pin 2
22	VDD2	/	+5V power supply pin 2
23	DOR	O	Rch data output
24	DOL	O	Lch data output
25	WCKO	O	Word clock output
26	BCKO	O	Bit clock output for output data
27	MDS	ip	Mode setting method selection H : Pin control L : Microcomputer control
28	LRCI	ip	LR clock input

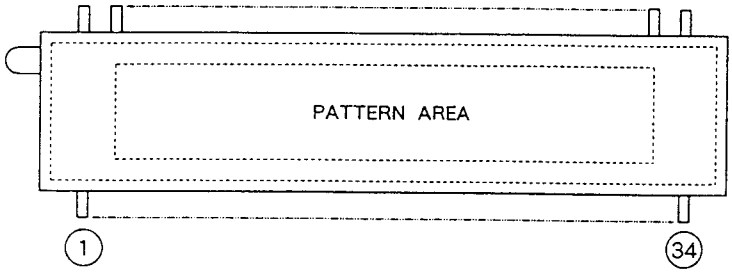
(*) ip stands for an input pin with a pull-up resistor.

【Attached table】 Operation mode select table

Mode select setting			Operation mode			Mode when microcomputer control reset
$\overline{HS}$	ASEL1	ASEL2	Operating speed	Characteristics	Output route	
H	H	H	Normal speed	Output added with high band	8 fs	○
		L		Only high band is output.		
	L	H		Normal DF mode		
		L		LLC mode		
L	H	H	Double speed	Normal DF mode	8 fs	
		L			4 fs	
	L	H		LLC mode	8 fs	
		L			4 fs	

7. FL INFORMATION

■ PEL1085 (V701)

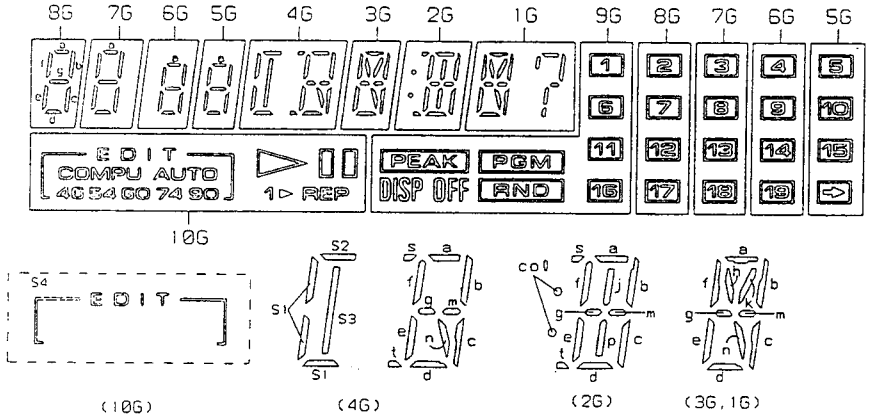


Pin Connection

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
CONNECTION	F1	F2	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NX	NX	NX	NX	NX	NX	NX	NX	F2

NOTE 1) F1, F2 ..... Filament
2) NP ..... No pin
3) NX ..... No extend pin
4) DL ..... Datum Line
5) 1G – 10G ..... Grid

Grid Assignment



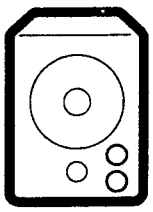
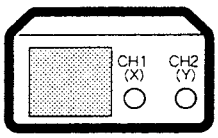
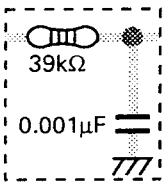
Anode Connection

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	4G	RND	e	e	e	e	e	e	e	e
P2	5G	PGM	f	f	f	f	f	f	f	f
P3	6G	PEAK	g	g	g	g	g, m	g, m	g, m	g
P4	1▷	DISP OFF	-	-	-	-	s, t	-	s, t	m
P5	7G	-	a	a	a	a	a	a	a	a
P6	8G	-	b	b	b	b	b	b	b	b
P7	AUTO	-	c	c	c	c	c	c	c	c
P8	COMPU	-	d	d	d	d	d	d	d	d
P9	S4	1	2	3	4	5	S2	h	col	h
P10	▷	6	7	8	9	10	S3	k	j, p	k
P11	▯▯	11	12	13	14	15	n	n	-	n
P12	REP	16	17	18	19	⇨	S1	-	-	

8. ADJUSTMENTS

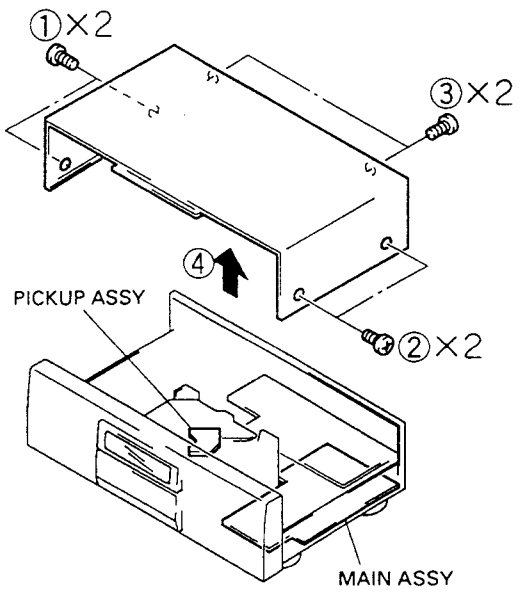
8.1 PREPARATIONS

1. Jigs and Measuring Instruments

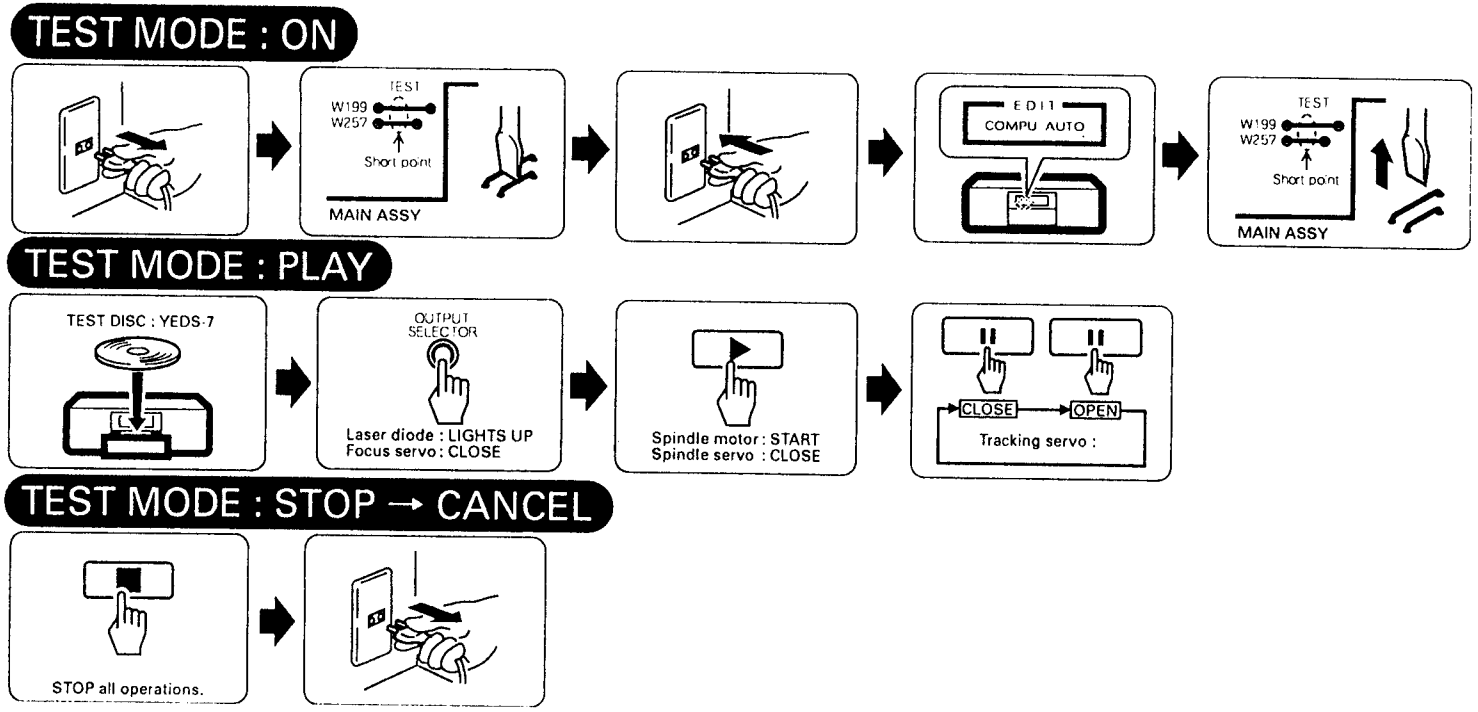
CD TEST DISC (YEDS-7)	⊖Precise screwdriver	⊖screwdriver (small)	⊕screwdriver (medium)
⊕screwdriver (large)	 Low-frequency oscillator	 Dual-trace oscilloscope (10 : 1 prove)	 Low pass filter (39kΩ + 0.001μF)

2. Disassembly / Assembly

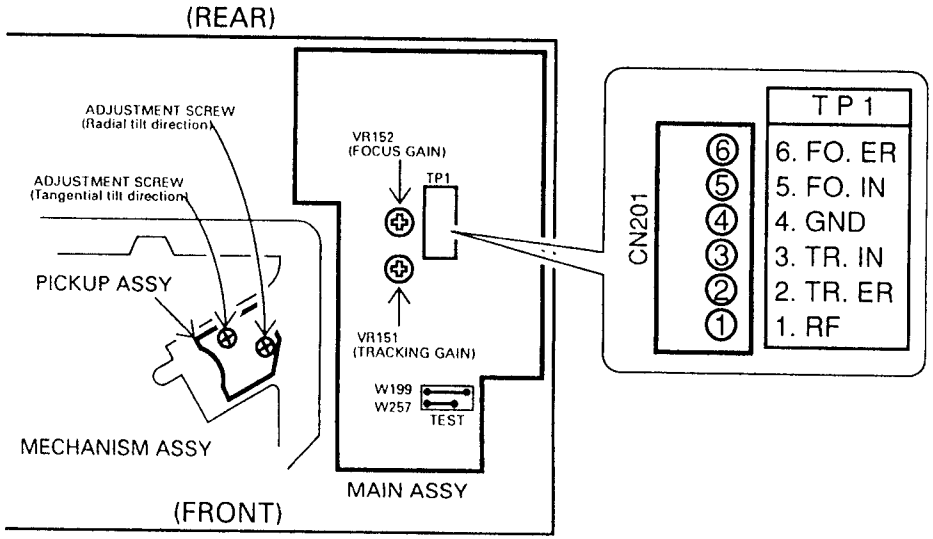
- Disassembly : ①→②→③→④
- Assembly : ④→①→②→③



1. How to Start / Cancel Test Mode



2. Adjustment Locations

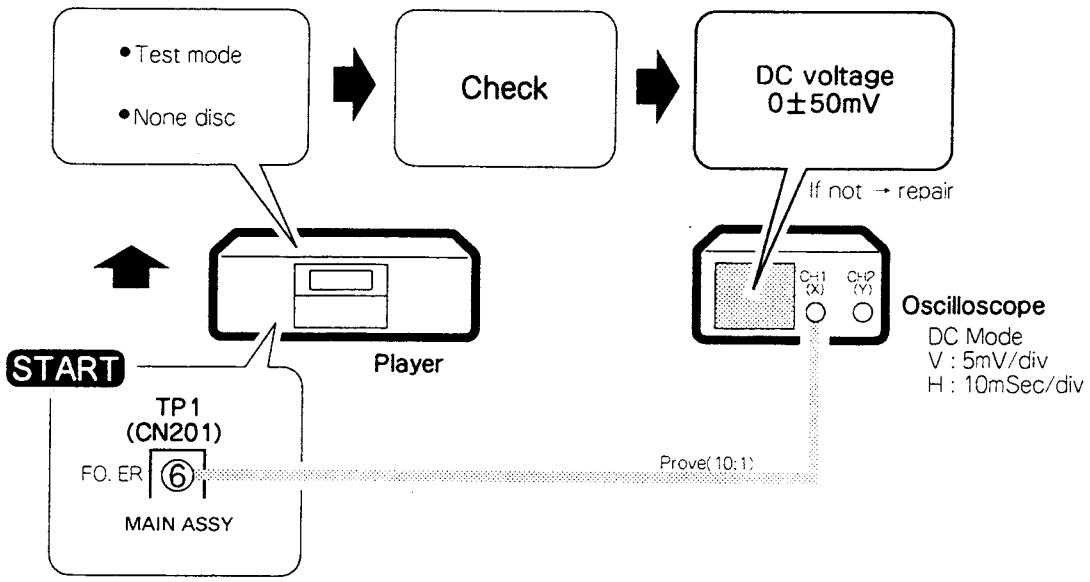


3. Necessary Adjustment Items

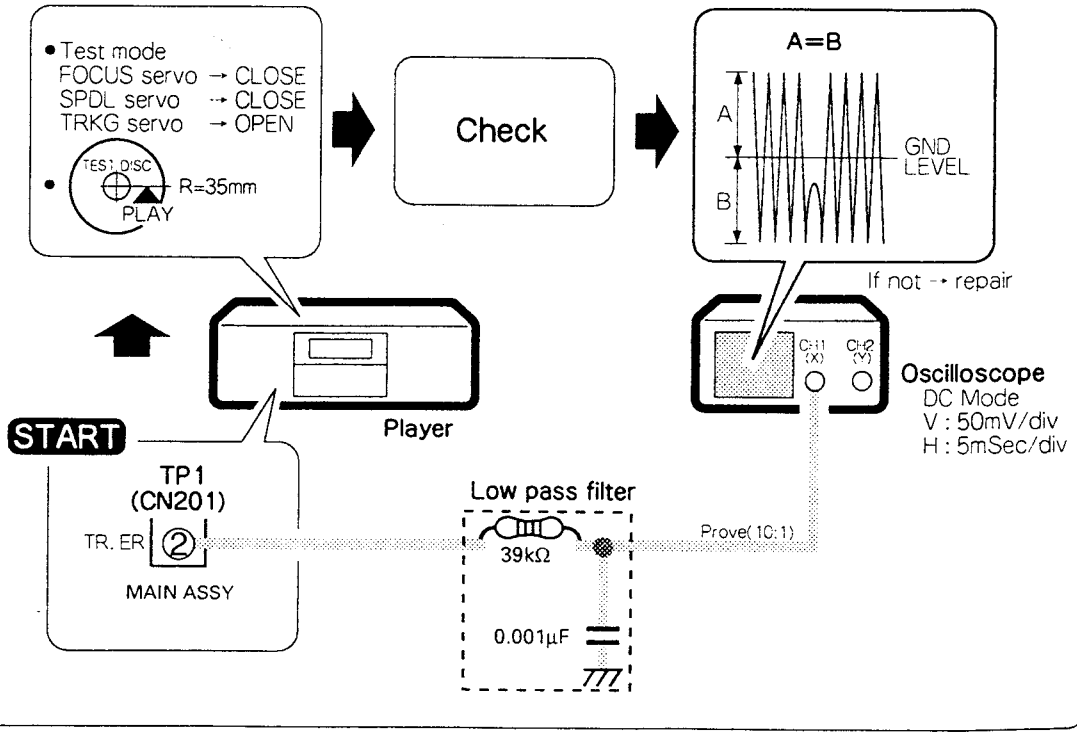
WHEN (REPLACE)	ADJUST/CHECK
PICKUP	1.2.3.4.5.6. → Page 33~35
MAIN ASSY	1.2.3.4.5.6. → Page 33~35
SERVO MECH ASSY	1.2.3.4.5.6. → Page 33~35
SPINDLE MOTOR	ADJ.→ Page 9

4. Check and Adjustment

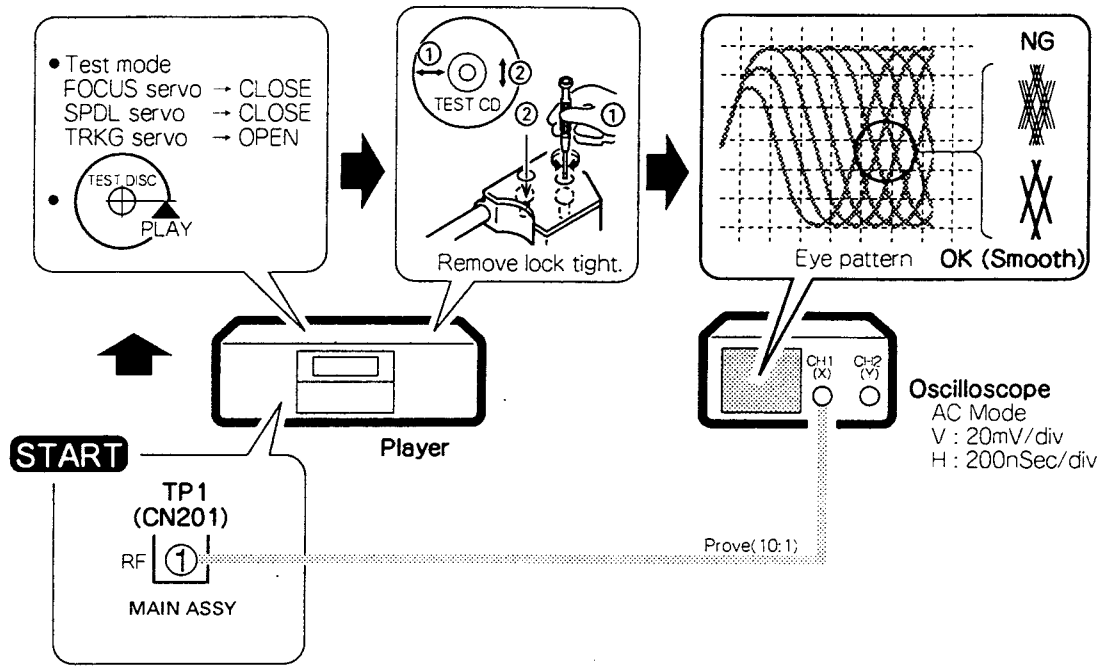
1. Focus Offset Check



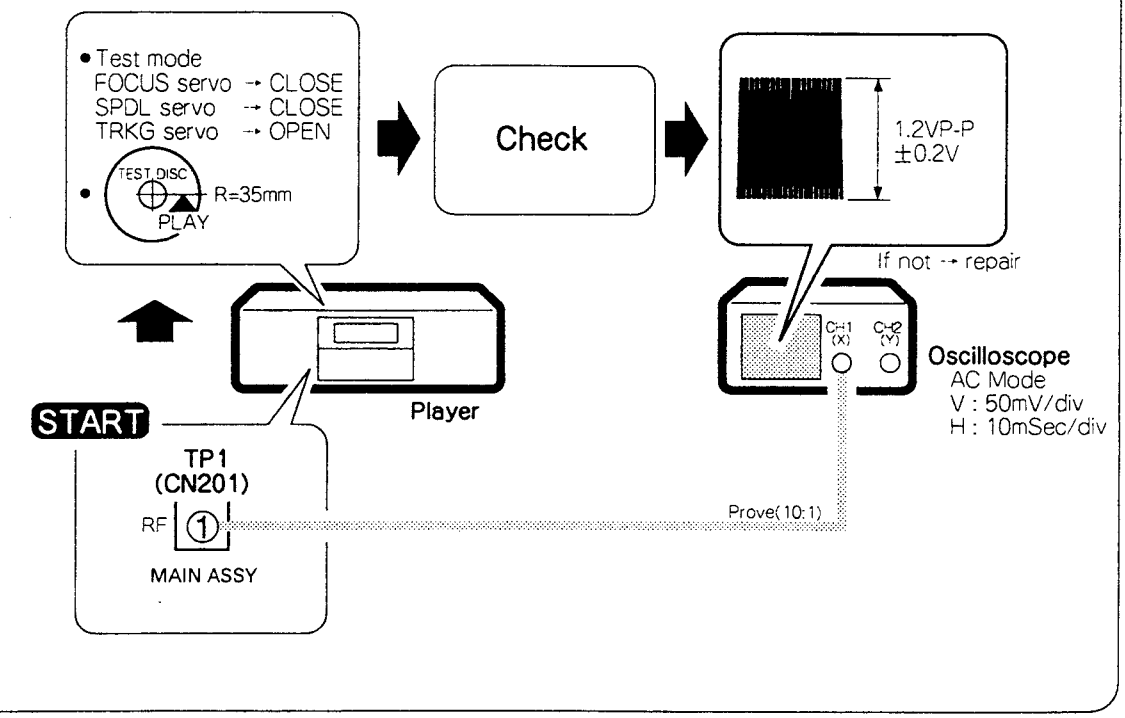
2. Tracking Error Balance Check



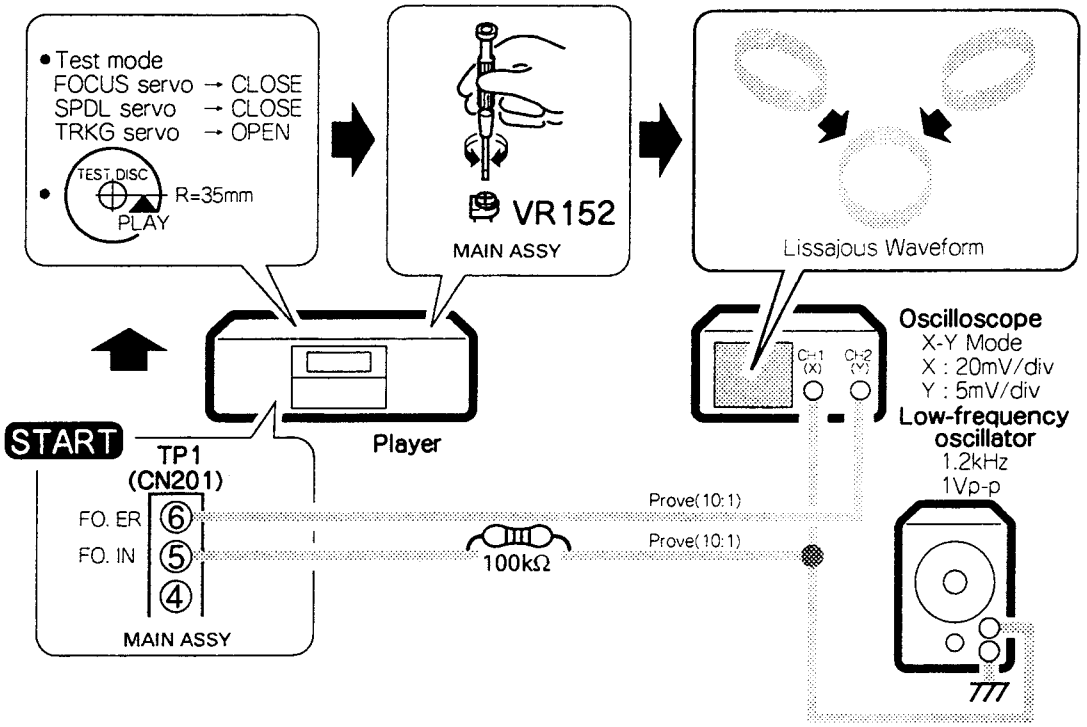
3. Pickup ①Radial / ②Tangential Direction Tilt Adjustment



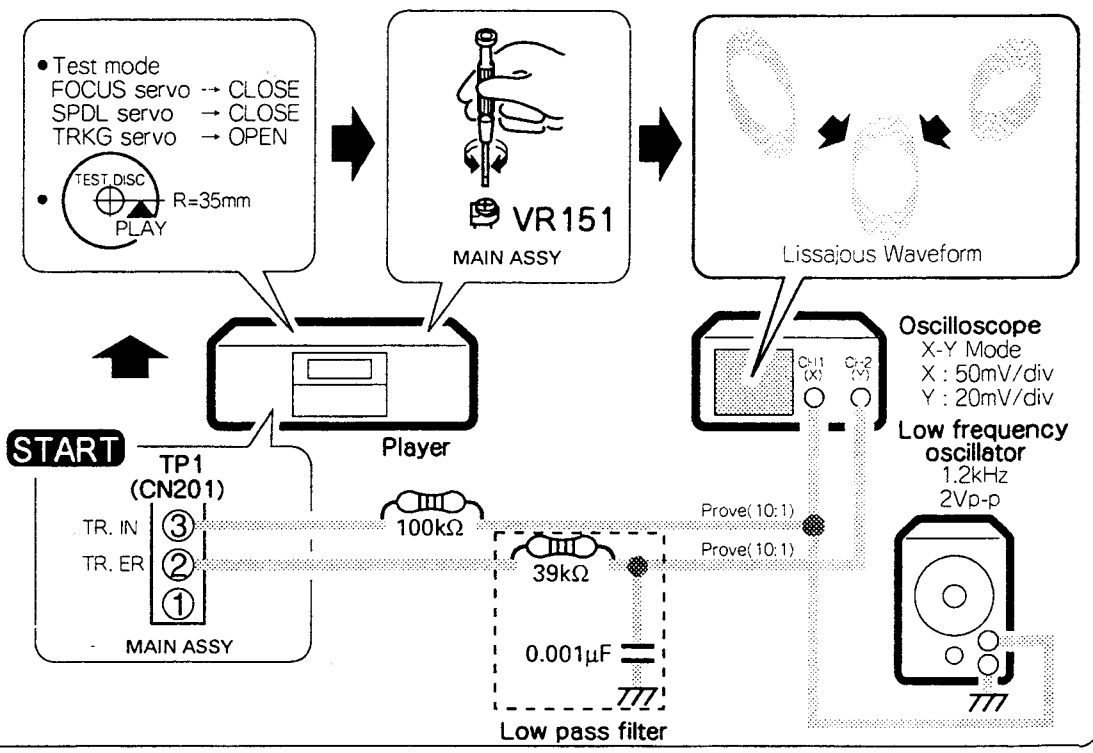
4. RF Level Check



5. Focus Servo Loop Gain Adjustment



6. Tracking Servo Loop Gain Adjustment



9. FOR PD-S904/HEM, HL, SD AND PD-S904-G/HEM TYPES

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

■ CONTRAST OF PD-S904/HEM, HL, SD, PD-S904-G/HEM AND PD-S904/HBW

PD-S904/HEM, HL, SD, PD-S904-G/HEM and PD-S904/HBW have the same construction except for the following :

Mark	Symbol & Description	Part No.					Remarks
		PD-S904/ HBW	PD-S904/ HEM	PD-S904/ HL	PD-S904/ SD	PD-S904-G/ HEM	
	AUDIO BOARD ASSY	PWZ2917	PWZ2917	PWZ2919	PWZ2 919	PWZ2917	
	SERVO TRANS BOARD ASSY	PWZ2921	PWZ2921	PWZ2923	PWZ2924	PWZ2921	
	VOLTAGE SW BOARD ASSY	Not Used	Not Used	PWZ2630	Not Used	Not Used	
	AUDIO TRANS BOARD ASSY	PWZ2993	PWZ2993	PWZ2995	PWZ2996	PWZ2993	
	MAIN BOARD ASSY	PWZ2964	PWZ2964	PWZ2966	PWZ2966	PWZ2964	
NSP	COAXIAL OUTPUT BOARD ASSY	PWZ2986	PWZ2986	Not Used	Not Used	PWZ2986	
⚠	AC power cord	PDG1055	PDG1003	PDG1003	PDG1056	PDG1003	
⚠	Fuse (T5A)	PEK1003	Not Used	Not Used	Not Used	Not Used	
NSP	Rear base	PNA2222	PNA2221	PNA2224	PNA2223	PNA2225	
⚠	Power transformer (AC220 – 230V/230 – 240V)	PTT1245	PTT1245	PTT1245	Not Used	PTT1245	
⚠	Power transformer (AC110V/120 – 127V/220V/240V)	Not Used	Not Used	Not Used	PTT1246	Not Used	
⚠	Power transformer/11W (AC220 – 230V/230 – 240V)	PTT1242	PTT1242	PTT1242	Not Used	PTT1242	
⚠	Power transformer/12W (AC110V/120 – 127V/220V/240V)	Not Used	Not Used	Not Used	PTT1243	Not Used	
⚠	Voltage selector (AC110V/120 – 127V/220V/240V)	Not Used	Not Used	Not Used	PSB1002	Not Used	
	Output button	PAC1661	PAC1661	PAC1661	PAC1661	PAC1677	
	Function button	PAC1744	PAC1744	PAC1744	PAC1744	PAC1751	
	Power button	PAC1810	PAC1810	PAC1810	PAC1810	PAC1809	
	Display panel	PAN1309	PAN1309	PAN1309	PAN1309	PAC1303	
	Front panel	PAN1320	PAN1320	PAN1320	PAN1320	PAN1318	
	Tray panel	PAN1321	PAN1321	PAN1321	PAN1321	PAN1319	
	Bonnet	PYY1175	PYY1175	PYY1175	PYY1175	PYY1176	
	Function panel	PNW2586	PNW2586	PNW2586	PNW2586	PNW2585	
	Name plate	VAM1032	VAM1032	VAM1032	VAM1032	VAM1051	
	Holder	PNW2591	PNW2591	PNW2591	PNW2591	PNW2560	
	Tray holder	PNW2592	PNW2592	PNW2592	PNW2592	PNW2561	
	FL sheet white 9	PAM1682	PAM1682	Not Used	Not Used	PNW1682	
	FL sheet orange 9	Not Used	Not Used	PAM1683	PAM1683	Not Used	
NSP	OPT. angle	Not Used	Not Used	PNB1190	Not Used	Not Used	
	Caution label	PRW1018	Not Used	PRW1018	Not Used	Not Used	
	Caution label HE	Not Used	PRW1233	Not Used	Not Used	PRW1233	Refer to Page 3.
	Caution label	Not Used	VRW1094	Not Used	Not Used	VRW1094	Refer to Page 3.
	Caution label (G)	VRW – 329	VRW – 329	VRW – 329	Not Used	VRW – 329	
	Operating instructions (English)	PRB1228	Not Used	Not Used	Not Used	Not Used	
	Operating instructions (English/French/German/Italian/ Dutch/Swedish/Spanish/Portuguese)	Not Used	PRE1219	Not Used	Not Used	PRE1219	
	Operating instructions (English/Spanish/Chinese)	Not Used	Not Used	PRE1220	PRE1220	Not Used	
	Cord with mini plug	Not Used	Not Used	PDE1247	PDE1247	Not Used	
	Packing case	PHG2136	PHG2136	PHG2138	PHG2138	PHG2139	
	Protector R	PHA1253	PHA1245	PHA1245	PHA1245	PHA1245	
	Remote control unit	PWW1093	PWW1093	PWW1093	PWW1093	PWW1094	
	Vinyl bag	Z21 – 013	Not Used	Not Used	Not Used	Not Used	

■ MAIN BOARD ASSY

PWZ2966 and PWZ2964 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		PWZ2964	PWZ2966	
	C341, C342	CEAS101M50	Not Used	
	C393	Not Used	CKCYF103Z50	
	R321	RD1/6PM561J	RD1/6PM102J	
	R391	Not Used	PD1/6PM244J	
	R392	Not Used	RD1/6PM102J	
	D391 – D394	Not Used	1SS254	
	L391, L392	Not Used	LAU010J	
	JA391, J392 Jack	Not Used	RKN1004	
	CN301 3P Jumper connector	52147 – 0310	Not Used	

■ AUDIO BOARD ASSY

PWZ2919 and PWZ2917 have the same contruction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		PWZ2917	PWZ2919	
	C951, C952	CMA181J500	Not Used	
	C957	CMA470J500	Not Used	

■ SERVO TRANS BOARD ASSY

PWZ2923, PWZ2924 and PWZ2921 have the same contruction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		PWZ2921	PWZ2923	PWZ2924	
	C1	CMA181J500	Not Used	Not Used	
	C55	CQMA154J50	Not Used	Not Used	
	C57	CMA470J500	Not Used	Not Used	

■ AUDIO TRANS BOARD ASSY

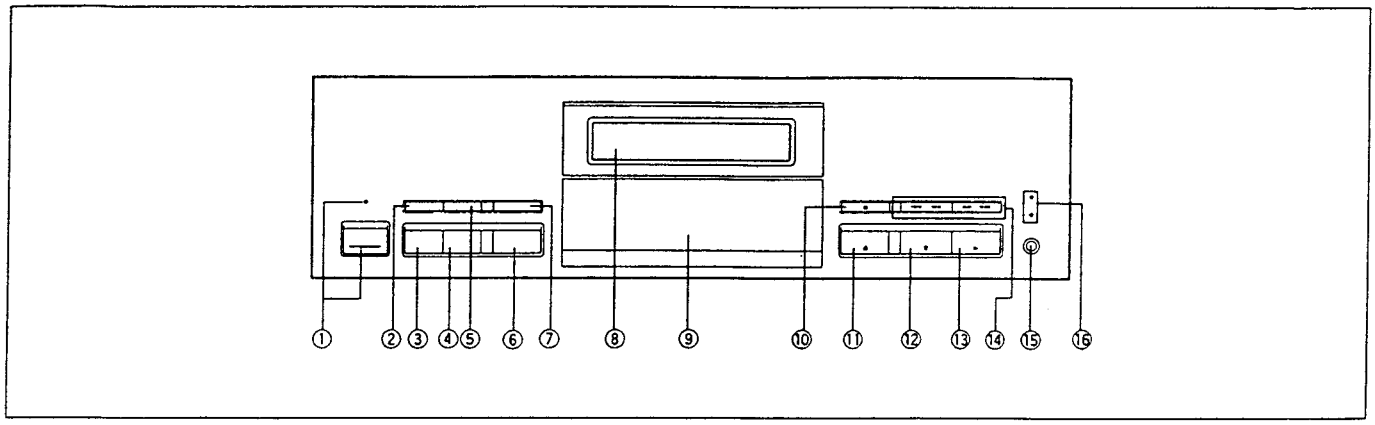
Although PWZ2995, PWZ2996 and PWZ2993 are different in part number, they have the same service parts.

■ VOLTAGE SW BOARD ASSY

• Parts List

Mark	No.	Description	Parts No.
SWITCHES			
⚠	S5, S6	Voltage selector	PSB1006

10. PANEL FACIFICATIONS



FRONT PANEL

① **POWER STANDBY/ON switch and STANDBY indicator**
② **DISPLAY OFF button**
③ **PEAK SEARCH button**
④ **RANDOM button**
⑤ **TIME button**
⑥ **REPEAT button**
⑦ **•COMPU/••AUTO EDIT button**
⑧ **Remote sensor**
Receives the signal from the remote control unit.
⑨ **Disc tray**
⑩ **Stop button (■)**
⑪ **OPEN/CLOSE button (▲)**
⑫ **Pause button (II)**
⑬ **Play button (►)**
⑭ **Track/Manual search buttons (|◄◄ ◄◄/►► ►►|)**
⑮ **OUTPUT SELECTOR button**
⑯ **DIGITAL/ANALOG output indicators**

11. SPECIFICATIONS

1. General

Type ..... Compact disc digital audio system
Power requirements ..... AC 220 - 230 V, 50/60 Hz
Power consumption ..... 21 W
Operating temperature ..... +5°C - +35°C
Weight ..... 5.0 kg

External dimensions ..... 420(W) x 286(D) x 131(H) mm

2. Audio section

Frequency response ..... 2 Hz - 20 kHz
S/N ratio ..... 112 dB or more (EIAJ)
Dynamic range ..... 98 dB or more (EIAJ)
Harmonic distortion ..... 0.0021% or less (EIAJ)
Output voltage ..... 2.0 V
Wow and flutter ..... Limit of measurement (±0.001% W.PEAK) or less (EIAJ)
Channels ..... 2-channel (stereo)

3. Output terminal

Audio line output jacks
Optical digital output jack
Coaxial digital output jack
CD-DECK SYNCHRO jack

4. Functions

Basic operation buttons
- PLAY, PAUSE, STOP

Search function
- Direct play
- Track search
- Manual search
- Index seach

Programming
- Maximum 24 steps
- Pause
- Program check/correction
- Program clear (single track or all tracks)

Repeat functions
- 1 track repeat
- All tracks repeat
- Program play repeat
- Random play repeat

Random play (repeat also available)

Switching display
Time consumed, remaining time (track/disc), and total time

Display off function

Timer start

Peak search

Compu/Auto program editing
Selects the tracks within the specified time.

5. Accessories

- Remote control unit 1
- AAA/R03 dry cell batteries 2
- Output cable 1
- Operating instructions 1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.